The Magazine of the

NATO Rapid Deployable Corps SPAIN Headquarters

Journal

2018







#ElevenNationsOneTeam





Commander's Foreword

Lieutenant General Francisco José Gan Pampols (ESP-A)
Commander HQ NRDC-ESP



Dear reader,

This edition of the NRDC-ESP magazine is not looking backwards to what we have achieved so far. The Magazine you are holding in your hands is looking into the future – to what lies ahead of us.

All articles are seeking for new ideas, describing new concepts and giving us an insight about future trends and possibilities derived from our experience. In a nutshell, this magazine describes our tasks and challenges for the next year and beyond.

NATO is adapting rapidly and so are we. Therefore, I encourage you to be part of this process and to actively shape the future rather than sit and wait.

The NATO Command Structure Adaptation together with the already implemented Readiness Action Plan and the foreseen NATO Readiness Initiative will have an impact on our future commitments. As you are already aware, we will start our JTF HQ stand-by period as early as January 2020. This shortens our preparation phase immensely. It needs the effort of each and every one to get it done.

2019 will be a demanding year. With this magazine we are also identifying lessons for our training and the mental shift we have to perform. I am looking forward to the upcoming preparations and I am very grateful for the contributions to this NRDC-ESP magazine!

As part of maintaining the intellectual power of our HQ, this magazine is a great means of disseminating new ideas and concepts.

I am truly convinced this HQ will continue achieving success within this complex period!

Eleven Nations – one Team!

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Concerns as NATO shifts to Article 5 Ops against a near-peer adversary

BG Anastasios PATSALOS GRC (A)
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Be Spartans, be frugal. Chase your enemy's COG[1] and protect yours. Maintain effective C2 and be faster than your enemy in all aspects. Be felt everywhere and be found nowhere. Target and don't get targeted. Surprise and shatter enemy's cohesion and resist to ambiguity from reducing your operational tempo. But do not disregard the adversary, he may be equally clever or even more...

Exercise leadership with art and don't overexpose. Never forget however, that when casualties are rising and enemy's pressure is challenging then the soldiers need their tactical leaders somewhere close, sharing with them the risk of the fight.



The art of war sets some fundamentals we can never escape from. Command and Control (C2) is always considered an important Centre of Gravity (COG) and as such it will always be targeted. After almost 2 decades of NA5CRO[2] prevailing the mindset of NATO, the return to Article 5 Ops/Maximum Level of Effort (MLE)/near-peer adversary contesting NATO in all domains is challenging once more.

We have to put aside any arrogance we may have subconsciously had so far, any feeling of superiority and adjust our way of thinking. All the known future dimensions, to include air, space, EMS[3], cyberspace etc. could be exploited by our adversary and used to carry out attacks on own forces & infrastructure. No NATO supremacy can be taken for granted in any domain.

Today, one of NATO's COG is its effective C2. Tremendous efforts with millions of funds and man-hours have been invested in this pillar in order to achieve effective C2 with functional interoperability among Member States (and Partners when needed) and yet there is space for improvement. A variety of rapidly deployable scalable modular Command Posts (CPs) are ready within NATO to deploy and tackle any challenge, as situation may dictate. Survivability of these posts is paramount.

So far NCS/NFS HQs rely on "reach-back" concepts, reducing the in-theater footprint and running the bulk of warfighting functions from the rear or from a "safe" distance. Sister GRF(L)[4] HQs are testing concepts like setting the Main CP outside the range of enemy threats and only 2-3 small tactical CPs moving continuously in the AOO[5] exploiting existing infrastructure and concealment. In parallel various Member States experiment on projects to find ways of maintaining full C2 capabilities without being static for long and subject to targeting. For example USA works on Mission Command applications using secure WiFi and devices certified by the Army for C2 on-the-move. At the final stage, all the systems, computers, printers, etc. will not need cables but only WiFi to be interconnected, thus saving time to set up a CP or move it again swiftly elsewhere.

The latest announcements of Russian new generation of weapons, and the simmering of high tech weapons race, even from China, dictate that NATO has to adjust. Concepts adopted by sister GRF(L) HQs like "to survive, to command, to fight" or reversed "to win we have to fight, to fight we have to command, to command we have to survive" are in the right direction.

Sharing same concerns and moving on a parallel direction, the NRDC-ESP has recently evaluated its C2 concept. It was conducted during the VALIANT LYNX exercise in May 2018 (VL18), while operating as a Corp HQ, within the framework of a MJO+. During VL18 our HQ deployed and tested additionally the tactical and mobile CPs, reducing further the size of the tactical CP, in order to add survivability and flexibility, leading one ESP DIV and one BDE to a LIVEX in sequence of the CPX. Those efforts did not stop with the ENDEX of VL18, they have just started.





EX VL18. Mobile CP, on the move and established

1 Centre of Gravity
2 Non Article 5 Crisis Response Operations
3 Electromagnetic Spectrum
4 Graduated Response Force (Land)
5 Area of Operations

Following the Commanders guidance and under the supervision of our COS, NRDC-ESP have initiated a series of bimonthly CP activations and experimentations starting from September 2018, to further develop and improve the C2 concept and to adjust it to the new challenges. We will try to meet the following basic demands.

- Reduce footprint in-theater (tents, generators, trucks, containers, etc.)
- Adopt "be Spartans" attitude, not only in terms of having iron will but also in terms of "do more with less" and "be frugal".
- Exploit at max the Peace Establishment and do most of the C2[6] functions with no or with minimum augmentation.
- Reduce times needed.
- Reduce the staff needed to run the ICE CP maintaining the core C2 functions.
- Review and improve our C2 concept according to the observations collected.
- Reduce CIS footprint.

Bottom-line will be enhanced survivability, resilience and reduced footprint & emissions.

Beyond that, what I would like to add to this new venue is one specific concern which I also believe has to be considered seriously.

The curse of our "smart" tools.

It has to do with the use of smart-phones, tablets, smart-watches, and any other smart devices in the living area, just close to the CP [7]. Any reckless use, (i.e. by a driver, a cook, anyone), can ruin all the aforementioned efforts to hide and move frequently the CPs. Their use can easily betray the location of the user and consequently the location of the CP. Enemy's targeting will do the rest.

Unfortunately most of us have been addicted to their daily use. Scarcely some could get rid of them. We like/need to maintain a personal link with our families and friends. Some are fans of every new technological achievement, fans of new devices, new applications and new functions. All these "tools" make us feel more efficient, faster when coping with running issues, real masters etc. Without them we suddenly feel crippled, isolated, useless, and not aware of the situation around us. Exactly there lies the danger of misuse.

Inevitably, one of our worst enemies is ourselves. Our bad habits, our addiction/attachment to "rights", our fears, our misperception of reality, our ignorance.

However, morale is an issue. I fully acknowledge that speaking with homes keeps the moral high. But there must be other means/ways established for mitigating this human need. There are various simple & secure options, which must be studied further in each case.

My personal approach is holistic and with no exemptions. Strict restrictions on bringing in theatre personal smart-devices should be posed and followed by all, without hesitancy or exception. And this has to be first practiced during exercises, maybe expanded at daily work as well.

Just to give an example, earlier this year some articles popped up in the media that "Secret military bases were revealed by fitness app Strava" [8]. The daily routes used by military personnel while doing PT eventually revealed all the installations and even the routes of the foot patrols. But the issue is not about Strava. The issue is that all modern applications are trying to get from every client his/her biometrics (for security /identification), his/her profile (for targeted advertisements / announcements of interest) **and finally his/her geo-location** (for more accurate localized servicesi.e.traffic, weather etc.)



6 Initial Command Element

7 Given that private phones are forbidden to enter the NATO SECURITY perimeter of the CP, they are usually used at the tents or left somewhere outside the main entrance. This precondition in the CROs era was enough for not monitoring the discussions or taking photos – videos thus breaching security. Now with the GPS preinstalled, each cellular phone is also an active beacon. The rule "let it out in the boxes" is no longer safe, nor is the rule "take out the battery" because batteries can no longer be extracted. And we must know that smartphones even when switched off, they still emit signals.

8 https://nakedsecurity.sophos.com/2018/01/30/secret-military-bases-revealed-by-fitness-app-strava/
https://www.phonearena.com/news/Russia-No-Strava.-Fitness-tracking-app-revealed-remote-US-army-base-locations-and-layout_id102026

The current trend is to promote more and more "cool" attractive commercial applications. In the end no one will be able to live not a single moment without his "super tool", his smart phone. Smartphones or smart-watches tend to become the permanent connection of each individual with his/her wallet, ID card, social environment, close smart devices, the gateway to the Internet of Things (IoT)[9], and literally everything. The price we will be paying is our privacy.


Alexander approaches Darius and the retreat starts.

So far so good, for simple citizens, nothing is alarming and the rule of offer vs demand, tradition vs fashion will lead the market. But we have to understand that for military people...
...geo-location and remote tracking by civilian/commercial applications is an unacceptable condition.

As operational people, we take things very seriously. We have to. Imagine the consequences of a single hit in our CP. The C2 will be degraded with unforeseen consequences. Therefore we should leave no room for such a possibility.

In order to be ready to implement restrictive phone policies in real ops sometime in the future, we have to start from today. Train as you fight, otherwise convenient compromises can become bad habits and bad habits in ops are catastrophic.

Closing this article, allow me to remind a historic example in order to stress further the importance of securing our COG, our CPs.

It comes from Alexander the Great, King of Macedonians and leader of the Hellenic League, at the battle of Gaugamela 331 A.D. By masterly using the OODA[10] loop cycle for both command and control and, in the same time, for ride and fight, Alexander quickly identified the COG of the Persian Army - their Emperor King Darius, exposed somewhere in the center of the huge Persian formation, protected by his royal guard.

Alexander immediately decided on his new COA, the decisive attack against that COG. Himself he led his spearhead Macedonian Companion cavalry of "Heteiroi"[11] like a wedge directly against the Persian King's Guard. The impact of such a maneuver was enormous. The feeling of the deadly danger, the unbeatable Macedonian Hetairoi approaching the Persian King, overwhelmed their stance, overturned the royal guard and finally forced King Darius to a quick retreat, followed by the collapse of the front and resulting in the collapse of the entire Persian Empire.

Since that era, nothing has changed. Commanders and Command Posts will always be COGs targeted with all possible means. On the other way round, troops "abandoned" by their leader are subject to scattering and destruction.

To conclude, we all have to understand that shifting from CRO[12] to Article 5/MLE[13] Ops, we will encounter full exploitation of any existing vulnerabilities. Large CP footprints, electromagnetic emissions, thermal image, poor concealment and exposure to sophisticated satellite means may reveal CPs and render them subject to TBM or air strikes. Furthermore our smartphones and the Internet of Things can very easily be exploited by the enemy to find where we are and attack to destroy or disrupt.

For these reasons we must protect ourselves, see how we can reverse the odds and exploit the enemy's smartphones and applications to locate his C2 with the aim to strike him first. It is as simple as that. But the first step at our level is to "be Spartans" and be strict with our desires and weaknesses.




EX VL18. Tactical CP

9 That is all the "smart" devices: TVs, refrigerators, coffee machines, A/Cs, cars, etc.

10 Observe, Orient, Decide, Act.

11 "Hetairoi" is actually the Greek word «Εταίροι» (Companions) and were the elite guard of the king, also called Somatophylakes (Gr. word Σωματοφύλακες) or Royal Friends (Gr. word: Philoi = Φίλοι)

12 Crisis Response Operation

13 Maximum Level of Effort

Lessons Identified

Corps Rapid Decision-Making in Execution
A Mid-Term Planner s Perspective

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Lesson Identified: Decision support tools (decision support matrix/decision support template) and a practiced rapid decision-making process are critical tools to improve the decision-action cycle during an operation. The more proficient the use of and details provided in the development and refinement of these processes/products, the more they benefit commanders and staffs by creating efficiencies reaped in the execution phase.



In this age of the "strategic corporal," adverse effects from an act, impact multiple battlfield domain – physical and virtual – faster than most commanders and staffs can react to implement controls. Years of COIN and low-intensity conflicts forced staffs inward – creating an over-reliance on digitally enhanced and predictive instruments – and resulted in a departure from the value of basic, analog staff tools and processes developed in previous eras to assist in rapid decision-making. Coupled with the shrinking technology gap between NATO and our near-peer adversaries and non-state actors of the foreseeable battlefield, commanders and their staffs must re-discover and refine people-generated means and methods to maintain their operational edge delivering synchronized effects.

Over multiple exercises at the MJO scale[1], this author observed that, when initial operations failed to shape the battlefield as planned, the staff was pressed to recommend multiple short and mid-term planning change of priorities to get the plan back on track to achieve desired results in subsequent phases. Reorienting the Corps plan after beginning an attack is not a novel concept, however, reacting to issues at the Corps level is cumbersome and it takes time to implement decisions and assess effects. To influence this proactively, staff emphasis and development of detailed decision support tools assist to better prepare for the foreseen contingencies. During execution, the staff's reference to these products – Decision Support Matrix (DSM) and Decision Support Template (DST) – enhanced the decision-making process. However, a staff cannot predict the myriad of disruptions to a plan in a complex operating environment, therefore, the ability to rapidly identify issues, and present the Corps Commander options to successfully tackle the problems, is paramount to enable land forces to retain their decision-making advantage on the battlefield of tomorrow.

Decision Support Tools

At the Corps level, staff energy and time is absorbed advancing information along the cognitive hierarchy[2] and determining if there is an issue requiring Corps resolution. Once a problem is acknowledged, the staff is further challenged to determine where to start developing suitable COAs for the COM. The analysis of the situation and the development of options consume time needed to implement the action which possibly increases risk and/or reduces the value of the new task(s) to be executed. Thus, commanders and their staffs need help in the form of time-saving tools and frameworks to create efficiencies in the decision-making process and further facilitate a shared understanding of the operating environment. Decision support tools are enabling devices that when employed deliberately in a changing battlespace will reduce workload and accelerate the decision-making cycle allowing commanders to "out-think" their adversary and maintain momentum.

[1] Exercises observed or participated: Exercise Trident Javelin 2017, LANDCOM, JWC, November 2017; Exercise Trident Jaguar 2018, PHIIIA, NRDC-GR, Thessaloniki, GR, April 2018; and Exercise Valiant Lynx 2018, NRDC-ESP, Chinchilla, SP, May 2018.

[2] Cognitive hierarchy is often referred to the process when staffs analyze information; taking that information from mere data to understanding how the information affects the operational environment and combat functions, and subsequently identifying if that information is truly a problem (as opposed to an expected friction of maneuver warfare or a subordinate unit dilemma).

DSMs and DSTs are staff instruments that facilitate rapid decision-making. However, unless the team is familiar with and trained on the products, they will be just an added piece of kit with minimal utility. DSM/DSTs are referenced and defined in NATO doctrine as key war-game outputs and aids to make battlefield decisions[3], but a lack of examples fails to promote the usefulness of the tools. As previously observed, in the occasion where a DSM and/or DST was developed, it was rarely referenced by the Corps-level staffs during execution. Used extensively at the division level and below, decision support tools retain value at the Corps/LCC/Joint level as key-warfighting documents.

Linked to commanders' decision points and the Commander's Critical Information Requirements, comprehensive decision support tools are purpose-built products to assist the commander and staff in execution when workload is increasing. The multi-domain battlefield requires land commanders and their staffs to continuously digest a wide array of information then determine its relevance within a limited time of value. Decision support tools are developed and refined during the planning and preparation phases – before execution – when time allows for deeper, more careful decision-making. During execution, DSMs and DSTs are valuable in identifying/framing the important problem(s) for the staff, keeping them oriented despite the large amount of information being received. What was important to the COM during planning still retained prominence despite the chaos of the close fight.

Outlined below are a few key elements that should be integrated into DSM/DST development:

- Decision support tools must be Commander-centric. Tools must be formatted to help the commander and staff visualize the operation and the expected outcomes of decisions.

- Must be nested with the Higher Headquarters decision support tools. Hold the higher HQ accountable for developing effective DSM/DSTs.

- Simple and standardized. To preserve their function, tools must be simple to understand by staff and the commander alike. Use of standardized operational terms and graphics enhances a shared understanding across the depth and breadth of the units involved[4].

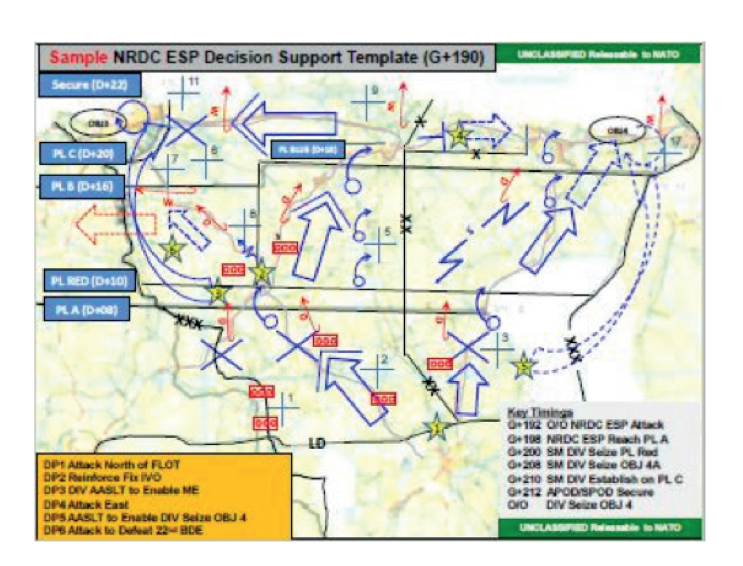
- Tools must be updated, disseminated widely, and discussed often. DSM/DSTs are living documents that should be refined as the battlefield conditions change. Increased awareness and reference throughout the preparation phases (i.e. rehearsals) increased the staff's experience working with the tools.

- Predictive but not Pandora's Box. Determining relevant decisions, conditions and options for the commander can be challenging. The staff's identification and annotation within the DSM/DST should be limited to: those events and significant problems that pose a substantial risk to mission or risk to the force; or a set of circumstances that allow an advantage over an opponent which could satisfy a tactical objective. Applying the FASD (Feasible, Acceptable, Suitable, and Distinguishable) COA screening criteria is useful here.

- Flexible application of the DSM/DST during execution. When "fighting" the tools, the staff must not employ them so rigidly as to blind themselves from the indications that a decision is near. The options may be useful despite not satisfying all of the listed conditions initially anticipated.

NRDC ESP DECISION SUPPORT MATRIX (EXAMPLE)

DP	Time	Decision	Conditions	PIRs/NAI		EEFIs/FFIRs		COM Options
				Purpose	Resp	Purpose	Resp	
1	G+192 (O/A D+2)	Corps begin attack North of FLOT (Tied to LCC DP 3.2)	1. ENY 41st ATK BN is destroyed 2. ENY 1st and 2nd echelon ADA is neutralized (ACC retains local air superiority to PL B) 3. OMD-C (21st BDE) does not occupy BPs along DL2 [MDCOA] 4. ENY 812 MECH BN is Destroyed (CAB Attack D-Day) 5. BDR Obstacle Belt 1 location and type identified 6. ENY 82nd and 83rd BDEs withdrawing north (~10% attrition) 7. Communication link (voice or digital) established with EDF in Tallinn at Corps.	1. Position of BDR reserve (10th DIV). LCC PIRs 3, 4, 5, 6. 2. Corps PIR 1 Intent and location of BDR and Tactical Reserves. 3. NAIs 3-8, 14-16, 18, 19. Determine CE and locations of first/second echelon forces and obstacles. 4. TAIs 1-3, 8, and 9.	**Corps** **FAB** **CAB** **SM DIV** **CAS DIV**	1. Effects of MNC-NE attack on fix 81st / 51st BDE. 2. Effects of non-lethal message s	**Corps** **SM DIV** **PSYOPS**	1. Delay attack +24-hours. Use DIV and Joint Fires to continue shaping operation to attrit BDR 10%. 2. Attack 1st echelon BDR with 2x Attack AV BNs on D-Day to weight attack. Risk aircraft loss for future phases.
2	ENY Action	Reinforce Block IVO Paide (Deny OMD-C CATK/FoM along E263)	1. ENY 21st BDE/12th BDE reinforces 22nd BDE along E263 south of Tallinn. 2. PRT BDE CE <60% (can block not more than 2x ENY BDEs along narrow avenues of approach)	1. Corps PIR 1 and 7. 2. Corps SIR 1.1 and 1.2. 3. NAIs 14-16 Is the enemy advancing to reinforce 22nd BDE/exploit Corps ME western flank? 4. TAIs 7, and 8.	**Corps** **SM DIV** **PRT BDE**	1. Corps FFIR 8 Combat Effectiven ess of PRT BDE	**Corps** **PRT BDE**	1. Reinforce PRT BDE block along E263 with BDE (-) from SM DIV. 2. Divert RW attack from OMD-E field artillery to attack to deny ENY FoM along E263. 3. Employ Reserve attack to deny CATK.



3 AAP-39, NATO Handbook of Land Operations Terminology, Edition B, Version 1, December 2015. Decision Support Matrix (2-39) is defined as an aid used by the commander and staff to make battlefield decisions. It is a staff product of the war-gaming process which lists the decision point, location of decision point, the criteria to be evaluated at the point of the decision, the action or options to occur at the decision point, and the unit or element that is to act and has the responsibility to observe and report information affecting the criteria for the decision. Decision Support Template (2-39) is defined as a staff product which graphically represents the decisive points and projected situations and indicates when, where and under what conditions a decision is most likely to be required to initiate a specific activity or event. See also ATP-3.2.2, Command and Control of Allied Land Forces, Edition B, Version 1, December 2016; and APP-28, Tactical Planning for Land Forces, Edition A, Version 1, April 2018.

4 No NATO standard format or examples found for Decision Support Matrix or Template. An example is referenced in APP-28, 3-1 which directs planners to ATP-3.2.2 ANNEX D but no example exists.

Rapid Decision-Making Process (RDMP)

Another means that staffs employ to gain efficiencies in the decision-action cycle is a Rapid Decision-Making Process. A cognitive procedure, RDMP enables the staff to provide a commander with timely and relevant information (across required combat functions) so he can make an informed decision in a time compressed environment attacking an unanticipated event that arises. RDMP is a blended, intuitive approach to problem solving with requirements of both Current Operations and Mid-Term Planners. More robust in capability and less urgent an issue that a Crisis Action Team[5] would react to, planners engage in RDMP when challenged to respond quickly to an opportunity or a threat variance and develop a solution within the time allotted[6]. It relies heavily on the published order, the Commander's guidance and intent. It is not complete or an abbreviated version of MDMP which seeks an optimal solution. RDMP is a planning methodology where how much of the technique that is explicitly performed depends upon the time available.

As a time-sensitive planning process, RDMP must be led and directed by an appropriate authority – DCOS OPS, ACOS G3, or G35 – and supported by a staff tailored to solve the presented problem and synchronize the tasks for subordinates. The Operations Process articulates an approach to rapid decision-making in the following steps:

1. **Compare the Current Situation to the plan.** The initial step of the RDMP requires the planners to compare the current situation to the OPORD (expected situation). Use of products developed during the planning process (DSM/DST, Synch Matrix, Intelligence Collection Matrix, Enemy SITEMP) and running estimates are key to this comparison. The staff must identify variances to their combat functions.

2. **Determine if and what type of decision is required.** The staff determines if a decision is needed by identifying if a variance indicates an opportunity that can be exploited to accomplish the mission faster or with fewer resources or if it threatens a shaping operation in as much as it may pose a risk to the decisive operation directly or in the near future.

3. **Develop a Course of Action.** If the variance requires a decision, the staff recommends the implementation of a new COA based upon refined commander's guidance. The COM will likely direct the COA and time available may not be sufficient to develop an optimal COA.

4. **Refine and Validate the Course of Action.** Once a COA is developed, the staff refines and validates the plan very quickly before presenting it to the Commander. Refinement and validation are a mini-wargame that may be conducted verbally over a map of the operations area with the functional area representatives required to solve the problem and refine the proposed plan.

5. **Implement and Assess.** Implementing the updates to the plan require the issuing of the orders through a FRAGO and synchronizing and collaborating with adjacent and higher units to facilitate effective execution of the plan.

At the outset during Exercise Trident Javelin 2017 and Valiant Lynx 2018, our team lacked a well-rehearsed rapid-decision making process. Despite reference in Corps' SOIs, RDMP was an ad-hoc MDMP blend-ed with CAT tasks rather than a practiced approach. Regular access and consistent guidance from the COM and DCOS OPS covered the gap in our staff efficiencies and facilitated a rapid reorientation to regain the initiative – both in planning and execution. However, access and senior leader time is a precious commodity, therefore, within the first 24-hours of the exercise, we realized the need to streamline the planning process to provide the COM with timely, relevant information of value to offset problems posited by multiple tactical dilemmas. Following the above mentioned steps and with the principles below, our rapid decision-making approach improved:

- COM-centric and delegated authority. The COM's involvement and guidance are key to rapid decision-making. Guidance is a critical element of any process meant to accelerate the decision-action cycle. Delegating authority, but not diluting the responsibility for rapid decision-making and ensuring access, is important to retaining decision momentum.
- Simple methodology with identified and articulated inputs/outputs. Time is the key ingredient and a published checklist of actions/results creates efficiencies. The staff's effective application of Decision Points, CCIR, Decision Support Tools, Synchronization Matrix, and OPLAN war-gaming sketch notes aid the staff in developing rapid and effective COAs.
- Trained and practiced approach. Based upon guidance, a well-rehearsed staff can quickly identify which pieces of information or problem the commander wants to manage and proactively develop controls to accelerate decision-making. Staffs and leaders should creatively seek avenues to implement and refine RDMP in the course of daily duties, outside of an exercise or operation.

Conclusion and way ahead

Whether it's a product or a process to retain decision-making dominance, staffs owe the commander rapid, refined analysis of the battlefield and considered options to solve complex problems. The Commander's guidance and the staff's application of trained processes and products are instrumental to their collective success against a capable adversary with advanced information and decision-cycle capabilities. Efforts to flatten information across a HQ and subordinated units to ensure a shared understanding in a multi-national land force are both difficult and essential. Land HQs will constantly fight the mission variable of time to preserve momentum, but familiar common tools and processes will enhance decisiveness.

Decision support tools and RDMP are a means to accelerate and ease decision-making. Effective use of DSMs and DSTs compliment the use of RDMP, imposing constraints on activity, and allowing the Chief of Staff to proactively guide the staff toward issues of importance. Staffs should exploit opportunities in their daily battle rhythms to inject decision support tools and RDMP to increase exposure and staff comfortability with the function of these rapid decision aids. Operations and Plans Sections should continually refine methods to effectively handover information and products from G5-G35-G33[7] as well as clearly articulate responsibilities and authorities to update the tools/tasks internal and external to the HQ. Superior warfighting documents and processes during execution will enable commanders to visualize the environment and better prioritize efforts to ultimately fight and win tonight.

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5 NRDC-ESP SOI uses a Crisis Action Team as a reactionary planning capability to respond to a discrete incident that is beyond the routine capacity of the OPSCEN.

6 ADRP 5-0, The Operations Process, Rapid Decision Making and Synchronization Process (4-6), HQ, US Department of the Army, May 2012.

7 Refine methods in transferring decision support tools, overlays and information to expedite decision making. Observed difficulties throughout TRJN 17 and VL18. Note, EX ARRCADE THOR 18 Post Exercise Report, dated 22 June 2018, also identified similar decision support tool issues and refinement needed.

PROTECTION : Function of capacities

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G3 OPS Protection Chief

Protection, as a Joint Function has its development as one of the seven Combat Functions[1](Command, Intelligence, Fires, Protection, Sustainment, Maneuver and Information Activities) covering not only the Operational level but also the Tactical one. Usually, Protection (PROT) as a function and Force Protection (FP) as a capacity, are mixed up creating a kind of misunderstanding on responsibilities and activities.

In an HQ, the normal organization would be to have several capabilities related to FP as a Branch (MILENG, G3AIR, INFO OPS, INTEL...) while others as cells or part of them (CBRN, C-IED, FHP [2], Cyber Defense...). It is clearly a transversal relationship all along the staff. There is no defined and doctrinal organizational structure. HQs look for the best organization to accomplish the mission in the best way through integration and coordination of the staff. Different HQ organizations are presented (Figure 1, 2, 3).

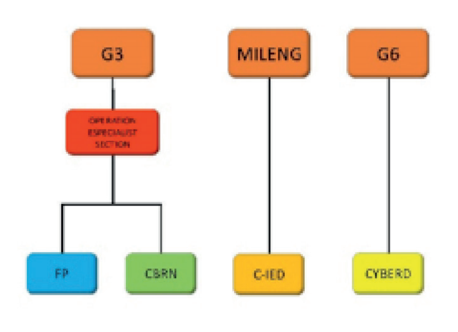


Fig-1. LANDCOM HQ

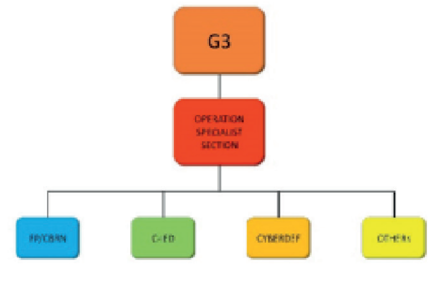


Fig-2. JFCB HQ

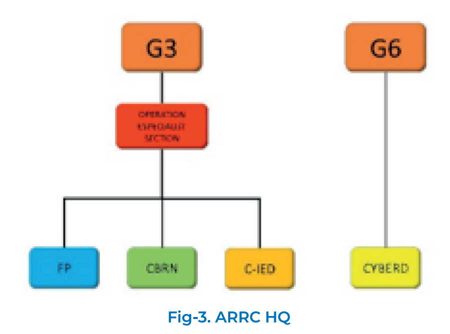


Fig-3. ARRC HQ

During the last ten years, NRDC-ESP has adapted its structure while trying to create an element that allows to support the Commander's decision process and the current operations management, in a fluid, integrated and coordinated way. At the beginning of the process FP was a cell containing a CBRN SME. During these years, new threats, such as IED and Cyber have arisen, forcing the HQ to adapt and deal with them.

As an initial step, the intention was to place C-IED in the MILENG Branch, and Cyber Defense in CIS Division. After a period of reflection and discussion, the final decision was adopted with the current organization divided in Peace Establishment (PE) (Figure 4) and Crisis Establishment (CE) manning.

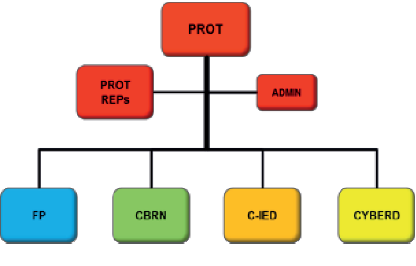


Figure 4

Criteria supporting this was:

- FP cell (PE): FP as capability of capabilities, needs to have an overall sight on all of them spread around the staff (INTEL, Security, G3AIR, INFO OPS, Cyber Defense, MILENG, G6, EW, CBRN, C-IED, GMED...) to ensure that all means and measures are considered.



- CBRN cell (PE): As there is only a staff officer (PE), the CBRN cell must receive reinforcement in deployment/exercise to build up the Collection Centre (essential for CBRN warning and reporting network) and the CBRN INTEL member. On the one hand, the Collection Centre establishes and manages the CBRN Warning and Reporting System and maintains communications with superior, subordinate and adjacent CBRN cells. It also provides advice on CBRN issues and timely and accurate information. On the other hand, the CBRN INTEL member is crucial to establish the appropriate link with INTEL branch in order to get a CBRN comprehensive approach, including CBRN indicators and events. The wide spectrum of a CBRN incident, which could result from the use of CBRN weapons or devices, the release of toxic industrial material (TIM) into the environment, or the emergence of secondary hazards arising from counter-force targeting, should be taken into account.



1 AJP-3.2 ALLIED JOINT DOCTRINE FOR LAND OPERATIONS Edition A Version 1 March 2016

2 Force Health Protection



Exercise countering threats in cyber space, sharing and fusing cyber intelligence and identifying targeting opportunities for kinetic and non-kinetic effects supported with capabilities provided voluntarily by nations. Cyber cells, embedded in G3OPS, appear to be a necessity in order to have the capability fully involved in the Commander Decision Cycle and current operations. This organization lets G6CIS/CD focus in monitoring, defending and recovering networks/capabilities after an incident, if any; while Cyber cell remains focused on planning operations and proper consequence management.

- PROT Representatives:
  - OPSCEN element (CE): crucial member in operations, it lets PROT cells/elements be aware in current operations, giving awareness about PROT issues in real time to the OPSCEN director and all the Staff. It has a permanent close communication with each cell, focusing on the most relevant area depending on the situation requirements, but without losing sight of the overall picture.
  - BMC[6] element (CE): in close coordination with G35, as a permanent member integrating all functional areas from PROT in the 48/72 hours horizon. This time horizon is a challenge taking into account how the different functional areas could be integrated or considered within the G35 planning.
  - TGT[7] element (CE): in close coordination with G2INTEL and Fires&TGT to integrate possible targets from C-IED/C-BRN or Cyber in the TGT process participating in the Targeting Working Group/ Board.

- C-IED cell (PE): The Commander and the staff must understand the adversary and the IED system and this is the key mission for the C-IED cell: to integrate the C-IED approach into the planning and execution of activities at all levels. In order to achieve this objective, the C-IED cell must have very close ties with INTEL and MILENG, to effectively target the adversary IED networks (AtN[3]) and to strengthen the knowledge and understanding of the evolving enemy IED TTPs, (DtF[4]). There is no doubt that monitoring the exploitation process, and the information flow, is an important contribution from the C-IED cell. The information/ intelligence collected will prime the lessons-learned process and will allow to prepare the force accordingly with new scenarios (PtF[5]) in close coordination with G7TRG&EXER. The rest of the branches and functional areas in HQ will be made aware (mostly in ops and exercises) by means of the CIED WG to keep situational awareness, all related with the IED threat.



- Cyber Defense cell (PE): in close coordination with G6CI/CD&INFO ASSURANCE, prevent and train the cyber staff for incidents that require their direct involvement as well as indirect activity, such as advising/guiding other branches.

- Plans element (PE): in close coordination with G5PLANS, as permanent member of the COPG/JOPG, with the main concern being to integrate all functional areas from PROT (FP, CBRN, C-IED, Cyber Defense) from the very beginning in the overall planning process. It runs as interface between PROT cells and COPG/JOPG.

This organization allows PROT to be integrated in the NRDC-ESP Commander Decision Making Process, through the interaction with all the Working Groups and Functional Areas. Also it lets this section accomplish the mission in whichever role (JTF-integrated model, LCC, CORPS) assigned to HQ, as demonstrated in different evaluations.

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3 Attack the Network
4 Defeat the Device
5 Prepare the Force
6 Battle Management Cell
7 Targeting

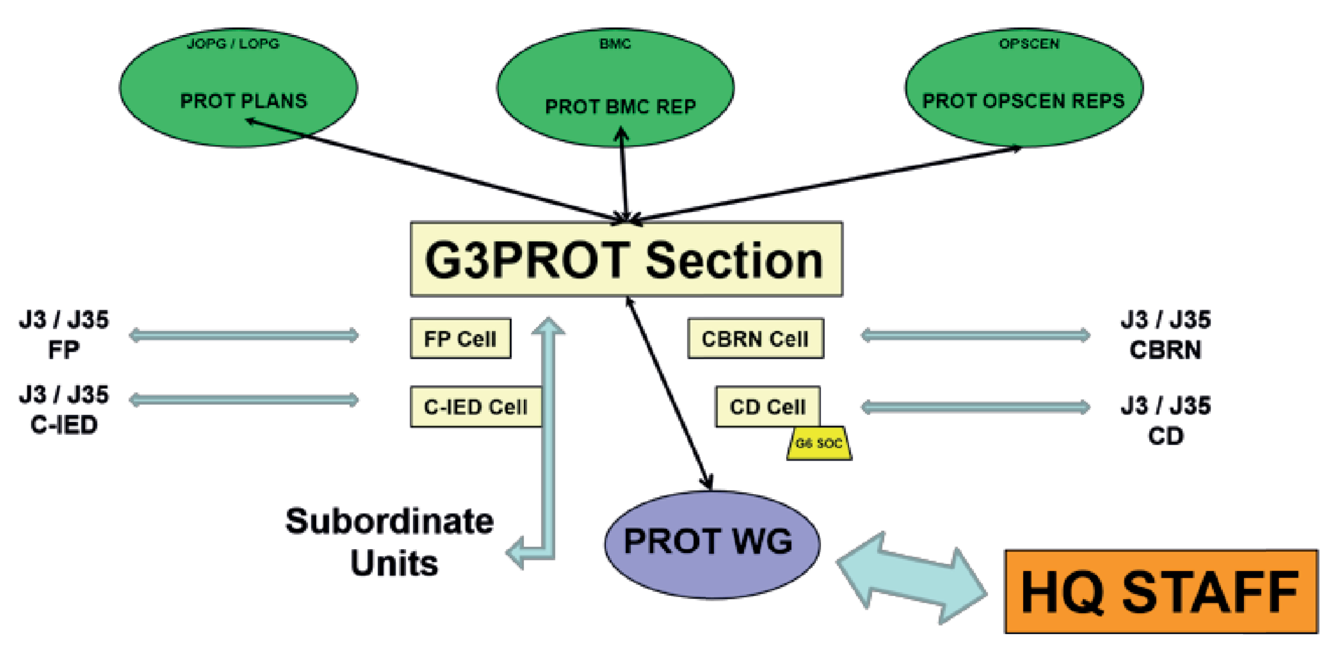


Figure 5

PROT maintains functional links with upper echelon, collateral and subordinate Units. Internally sets and directs the Protection working group (PWG) in which full coordination and synchronization of all protection activities, throughout the various functions and multidisciplinary elements that compose the HQ, is ensured. This PWG includes FP, CBRN, C-IED and Cyber Defence Working areas.

It consists of the ACOS G3OPS (Chairman), PROT Chief (Lead), OPS PROT MIL CLERK (Secretary) and other members as PROT PLANS, PROT FP, PROT CBRN, PROT C-IED, PROT CD, G3 AIR, INFO OPS, G2 INTEL, G2X, CORPS AOO Security Officer, Provost Marshall, SOF, MILENG, G4 LOG, G-MED, G6 CIS, G6 EW, G9 STAB, G8 FUNDS, PAO, LEGAD and LNOs in HQ and other representatives if necessary.

Some PWG functions are:

- Provide Situation Awareness, advice and recommendations in Protection (FP, CBRN, C-IED and CD) aspects.
- Assess threats and hazards.
- Establish the Force Protection Policy.
- Update protection procedures.
- Disseminate information.
- Monitor compliance.

The working group receives inputs about threats and studies the measures to be taken in accordance with the threat, the mission, and the own vulnerabilities of NRDC-ESP AOO as a whole.

Main PWG outputs, among others, are:

- FP Codes & FP State .
- Alert State update.
- Recommendations of changes in PROT measures.
- Identification of resources and necessities.
- Assessment of evolving threats and recommended PROT countermeasures.

Nowadays, conflicts are multidimensional and need a multidimensional approach. Organizations supporting asymmetric threats deal with a mix of capabilities forcing operational formations to develop a multifunctional approach. Governments, illegal & terrorist organizations, are able to obtain from different sources and illegal channels, information, assets and capabilities at their disposal that could place our forces at risk.

The challenge of the future is such that any protection requirement must have at its core an experienced and specialized element with a robust planning capability and a dedicated intelligent cell. Integrating these capabilities in the PROT section, the HQ is able to create a common approach to understand threats and consequences, integrating them as a whole in the HQ processes and coordinating appropriately with upper and subordinate echelons.

We will need to move from Situational Awareness to a true Situational Understanding, if we want to be effective.

The Evolution of Geospatial Support in NRDC-ESP. New trends and challenges

Lieutenant Colonel Marcos Sanz Oberberger (ESP-A)
G2 INTEL Geospatial Chief

1. INTRODUCTION

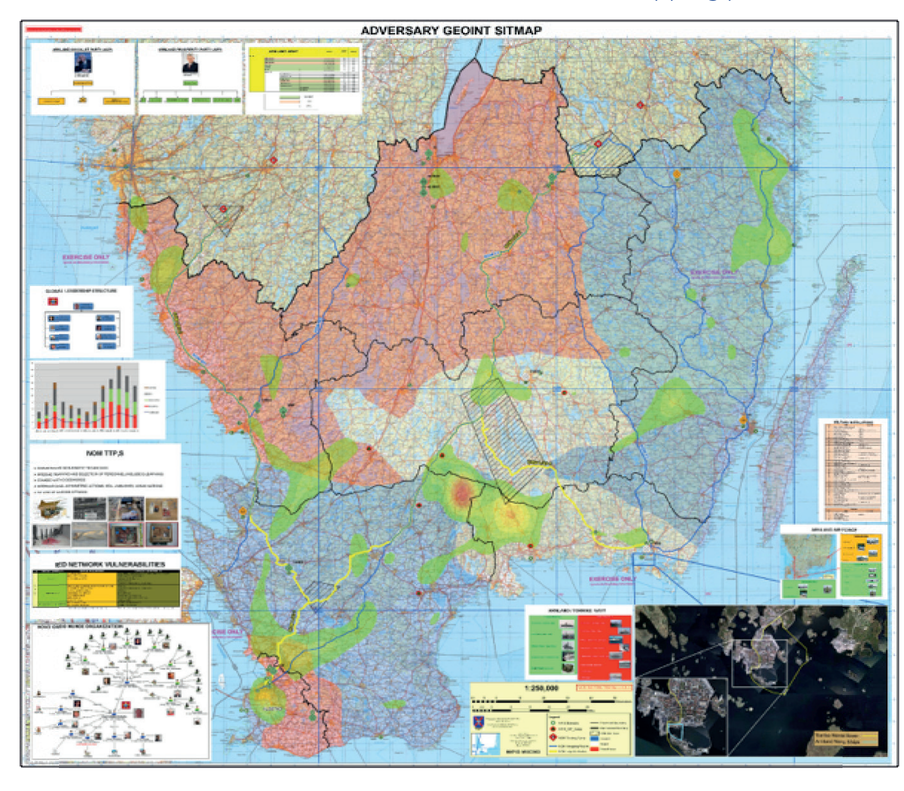
Traditionally, Geospatial Support (GSP) in NRDC-ESP consisted of a series of tasks aimed to produce maps or to perform some basic Terrain Analysis (TERA) in support of the planning and conduction of operations and exercises. The output of these tasks was, in most cases, produced in paper format or PDF files. For that, our GEO architecture was based on a stand-alone network with five geospatial workstations (GWS) along with some printing devices such as two plotters, one inkjet printer, and two laser printers. Regarding software, as we had no server, the GWSs were provided with 4 desktop licenses of ArcGIS[1].

In the last decade, GEO-technologies have evolved quickly. After several experiences such as our deployment in IJC (Kabul-Afghanistan), exercises, courses, and other exchanges with our NATO counterparts, we realized there was a need for reform in our GSP concept. In addition, the development of a variety of new tasks made reform an urgent requirement.

After exercise TRIDENT JAGUAR 2014 (TRJR14), it was clear that our GSP system had become obsolete. Our inability to digitally produce and distribute classified maps, provide Web Map Services (WMS)[2] to the new FASs, or even ensure the use of a Common Geospatial Framework, among others, made it clear that it was time to design a new concept of GSP fully compliant with the NATO Geospatial Policy (MC-0296).

2. PATH TO A NEW GEOSPATIAL SUPPORT CONCEPT

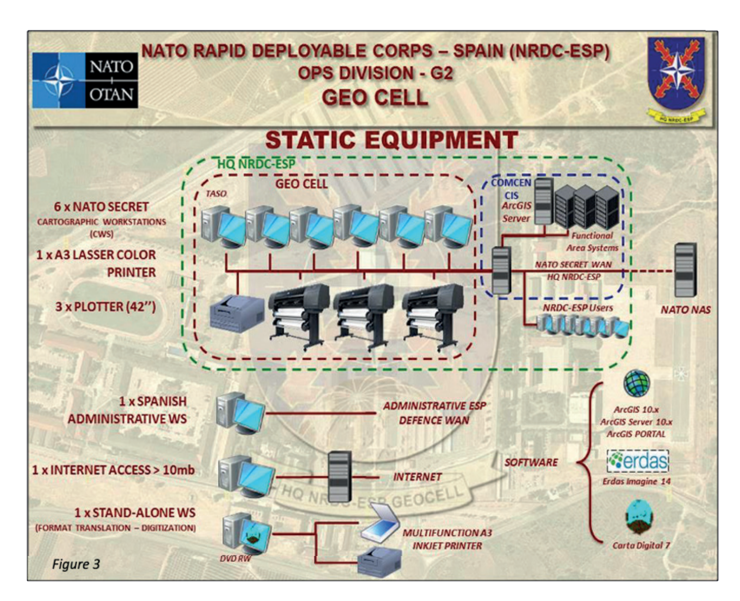
After recognizing the need, our GEO cell was ready to evolve from a GSP focused on mapping production to a more comprehensive concept. This new focus implied not only a profound restructuring of our computer architecture, but a renewed distribution of tasks among the GEO staff. This meant that our GEO cell had to encompass a number of new tasks never performed before at NRDC-ESP, in addition to the traditional ones.



In order to start the evolution of our GSP Concept, the first step was to define the objectives we intended to achieve once implemented. These objectives had to touch the four pillars on which GSP is based: Equipment (Hardware and software), Data[3], Personnel, and Formation.

In January 2015, while NRDC-ESP prepared for Exercise TRIDENT JUNCTURE 2015 (TRJE15) and its subsequent certification as Land Component Command (LCC) for the 2016 rotation of the NATO Response Force (NRF), our HQ initiated the acquisition of a GIS Server. Simultaneously, supported by G6 CIS[4] branch, our GEO cell performed the upgrade of its hardware with the acquisition of five new computers and two new plotters. After the upgrade, we started to integrate all GEO hardware into the NS WAN[5]. In this way, a Core GIS-like was built and our GEO cell reduced distances with our counterparts among the NATO Force Structure (NFS).

1 **ArcGIS:** GIS Software, developed by Esri (Environmental Systems Research Institute), one of the worldwide GIS-leading companies
GIS: Geographic Information System.
2 A **Web Map Service (WMS)** is a standard protocol developed by the Open Geospatial Consortium in 1999 for serving georeferenced map images over the Internet. These images are typically produced by a map server from data provided by a GIS database.
3 Geospatial **Data** are commonly named Geospatial Information (GI). This term refers to a wider concept that includes not only rough data but also geospatial documents and products.
4 **CIS:** Communications and Information Systems.
5 **NS WAN:** NATO Secret Wide Area Network. From now on NS.



During exercise TRJE15, NRDC-ESP proved its ability to provide a deployable GSP capability successfully.

In November 2016, the ESP Ministry of Defense signed an Enterprise License Agreement (ELA) with Esri (See footnote 1). Thanks to this agreement several units and organizations within the ESP Armed Forces (included NRDC-ESP) were able to acquire new licenses of Esri's Software (including maintenance, technical assistance, and formation). This significantly increased our GEO capabilities.

All the experience gathered from exercises TRJR14, TRJE15, the NRF16-related exercises, and the NRF16 stand-by period resulted in a complete redrafting of Geospatial Support and METOC Support SOIs[6].

From the very beginning, several issues appeared to be delaying the achievement of our Initial Operational Capability (IOC). One of the most serious problems we faced was how to reconcile the newly implemented system with NS security policies. As the subject of this article does not deal with this matter, I will not expound on it. However, it has to be said that, as security policies are being revised and changed constantly, the system settings must be revised too. Fortunately, Esri's technical assistance and NRDC-ESP CIS support are doing a good job to keep our systems working.

The integration of all GEO means into NS entails the inclusion of a large amount of data that previously was available through external hard disks, CDs or DVDs. This issue was also taken into account before the implementation of new GEO capabilities. For that, our GEO Cell was assigned a slot of 30TB storage. This gave us enough space to store not only our permanent GEO databases, but the new products and services that are being created every day.

As mentioned above, the renewal of GEO systems has entailed a significant change of mindset as well as an important investment. Nevertheless, most of the aforementioned changes are clear to the majority of our customers, but they have resulted in a definite benefit for the whole HQ.

3. GEOSPATIAL ARCHITECTURE EQUIPMENT

In order to achieve our IOC, the NRDC-ESP GEO capability was built according to the following structure:

- Hardware integrated in NS:

a) Static configuration (barracks). (figure 3)

- 1 GIS Virtual Server. With software ArcGIS for Server 10.x Enterprise advanced. This is the core of the GEO capability.
- Up to 6 Cartographic Workstations working as clients with ArcGIS Desktop 10.x
- 3 plotters (42'').
- 1 color Laser printer (A3).

- Not integrated in NS:
  - 1 Spanish Administrative workstation. Allows the exchange of data with the Military Spanish GEO organizations.
  - 1 free Internet workstation. Used to connect with civil GEO organizations and get data from open sources.
  - 1 stand-alone workstation. Used for digitization of documents and software not certified for NS.

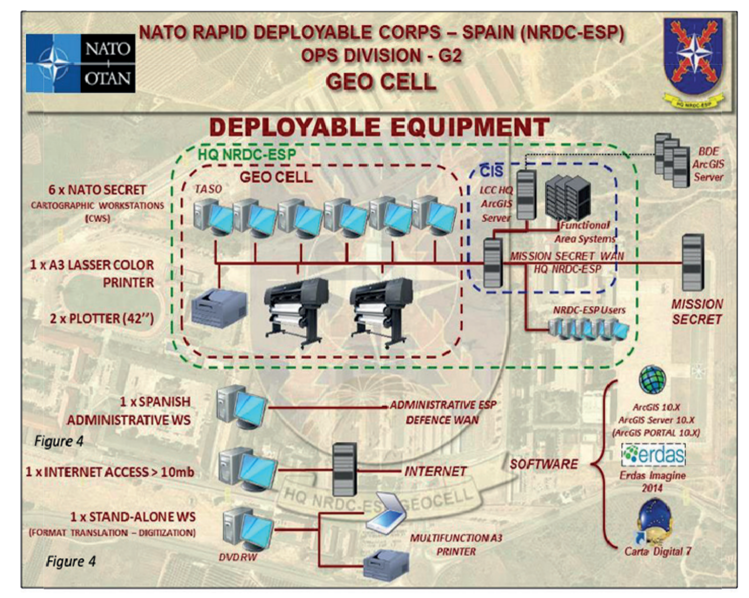
b) Deployable configuration. (figure 4)

- In the deployable configuration HQ NRDC-ESP is able to set up to 3 ArcGIS Servers for HQ NRDC-ESP and subordinate units.
- The ArcGIS clients are installed over laptops with the same software as the static configuration but in Mission Secret (MS).
- 2 Plotters (42'') integrated in MS.
- The rest of the equipment is the same as the static configuration.

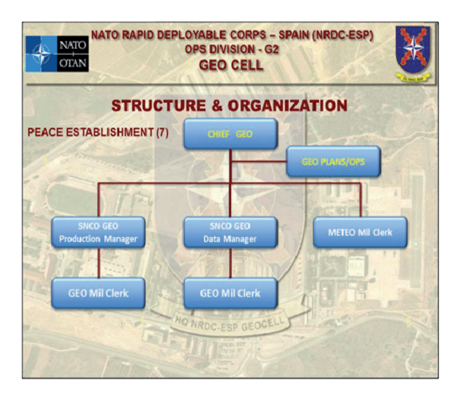
4. MANNING.

This article would be incomplete without mentioning the restructuration of our manning and the redistribution of tasks.

In our previous concept of GSP, there were basically two groups of tasks: Map Production and Map Depot management. Therefore, under the direction of Chief GEO and the supervision of the GEO Plans/Ops officer, there were two teams with one NCO and one enlisted in each one.



6 **SOI:** Standard Operating Instructions



However, the new GSP concept gives paramount importance to Data Management and the old Map Depot team has been converted to a Data Management team, leaving Map Supply as a secondary task for the Production Manager.

Figure 5 shows the new structure of our PE Manning.

5. LAST TRENDS AND CHALLENGES

The main premise in NRDC-ESP GEO Cell is to comply with NATO policies in Geospatial Support as well as the NATO Geospatial directives.

Nevertheless, the entire staff of the GEO team is well aware that Geospatial Support has to be useful and in line with HQ needs. Therefore, our aim is to reach customers making Geospatial Support as easy and friendly as possible.

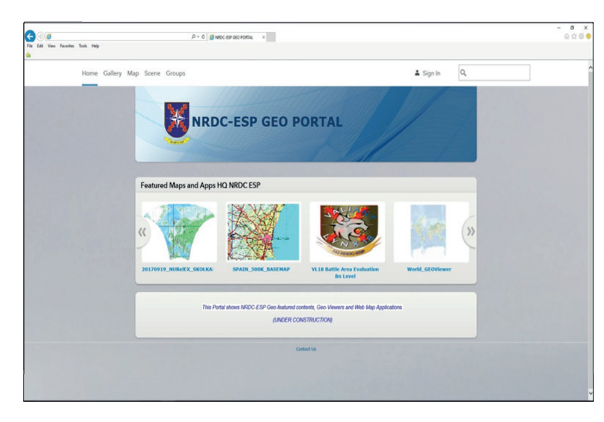
In order to achieve that aim our GEO staff is continuously investigating new trends in Geospatial production and analysis.

In this regard, GEO is currently working on the design and implementation of an HQ GEO Portal (figure 6), where customers could look for several types of products and even interact in order to customize them:

- Traditional thematic maps (Web Maps)
- Cartographic viewers, either of real world or related to current exercises.
- Web Map Services (WMS)
- Web Feature Services (WFS)[7]
- Web Applications (Web App) which allow customers make georeferenced[8] queries and analysis based on a map layer.
- Share all kind of geospatial information with our NATO counterparts.

This GEO Portal is currently under construction but may be visited in the GEO web part of the NRDC-ESP Share Point.

For now, the main challenge that NRDC-ESP GEO Cell faces is to achieve a level of specialization that allows customers to take advantage of all the possibilities that these new tools offer. This is especially hard as the GEO staff is being renewed constantly. Normally, a GEO technician without previous experience in our HQ, that has to replace another who leaves for numerous reasons (promotion, new assignment, retirement...) takes no less than one year to be trained and another year to achieve a good level of performance. This means that new personnel should have an expectation of at least three years of permanence in a GEO position to take advantage of its formation.

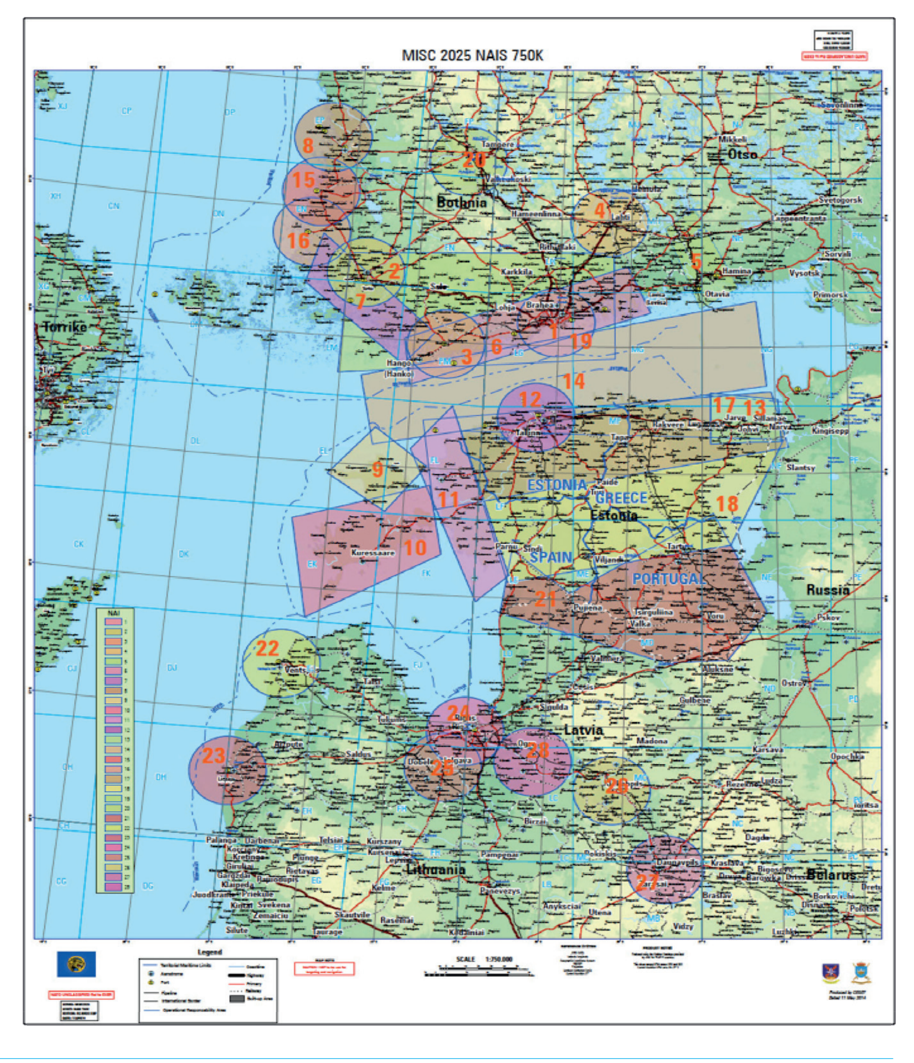


On the other hand, as new software and tools demand more and more powerful hardware, all our GEO equipment will need to be continuously upgraded, pending the future training program and budgetary availability.

6. CONCLUSION

To sum up, HQ NRDC-ESP has made a big effort in order to put our GSP capabilities on a level with the rest of NATO HQs. Three of the four GSP pillars (Equipment, Data and formation) have been improved substantially in the last few years, although manning is still a matter to be resolved.

Our GEO Cell is aware of the fast evolution of GEO processing tools and is always looking for opportunities to learn more in order to offer the best service to NRDC-ESP staff and contribute with our experience to the GEO community within NATO.



7 A **Web Feature Service (WFS)** Interface Standard provides an interface allowing requests for geographical features across the web using platform-independent calls. One can think of geographical features as the "source code" behind a map, whereas the WMS interface or online tiled mapping portals like Google Maps return only an image, which end-users cannot edit or spatially analyze.

8 **Georeferencing** means that the internal coordinate system of a map or aerial photo image can be related to a ground system of geographic coordinates.

SAPIIEM
supporting IRM & CM functions within a Corps

Major David Moreno Montón (ESP-A)
G2 INTEL IAQ ISR OPS Chief

SAPIIEM[1] is a set of tools created by the Company GMV as a part of the Spanish contribution to the multinational MAJIIC2 program (Multi-Intelligence All-Source Joint ISR Interoperability Coalition). This program, which was chosen as the concept on which the NATO JISR initiative has to be developed, is mainly focused on maximizing ISTAR capabilities by coordinating the employment of assets, improving the sharing of data coming from different sensors and managing ISR products, amongst others.

SAPIIEM is aimed to support the JISR process at operational level, but it can be employed at the tactical one, as it was done during Exercise Valiant Lynx 18 (VL18) by NRDC-ESP and during some previous exercises such as Trident Juncture 15 and Brilliant Jump 16. The design of the ISR architecture for Ex. VL18 and the subsequent configuration of the system to be used within the Corps was a challenge. Likewise, the adaptation of NATO JISR procedures to set the interaction between Corps G2 Intel branch and the subordinate units also implied a great effort.

Starting with SAPIIEM's main components, we can initially find ATENEA, a software that can be configured into different modules, depending on the role of the user. During Ex. VL 18, this software was available in the G2 INTEL / IRM & CM elements of the training audience (TA), as well as in the ISR units supporting the Corps and one of the subordinate Divisions, two highly active components within the EXCON.

The first configuration within ATENEA is IRM, designed to support the Intelligence Requirements Management function and thus focus on the development of the intelligence collection plan and the request for information management. With this tool, the Corps intelligence collection plan is published and the subordinate units, that are provided with ATENEA software, can import the intelligence requirements assigned to their organizations and subsequently include them into their own plans. Regarding RFI management, ATENEA allows to create requests from the intelligence collection plan and submit them to the systems in other organizations, as well as receiving requests. These incoming requests can be inserted in the active intelligence collection plan if necessary. In addition, the software can offer a visual help based on colours to know the current state of each RFI, as well as different kinds of statistics to measure the grade of performance and effectiveness of the whole process within the Corps.

A second configuration is CRM, aimed at facilitating the management of the collection requirements. As part of the job to be performed by the personnel involved in this process, ATENEA allows to convert intelligence requirements from the Intelligence Collection Plan into collection requirements and later proceed with the needed validation. This step, prior to top the JISR process, can be collaboratively carried out inside the IRM & CM elements. Apart from its own development of requirements within a determined organization, ATENEA can be used to submit a collection of requirements to the higher unit, either as a single request or as a part of the standardized collection requirements list, within the JISR deliberate tasking process. As a tasking tool, ATENEA software can be used to assign both collection and exploitation tasks to subordinate units.

As stated before, SAPIIEM is aimed to support the JISR process at operational level, but can be employed in a single service command (e.g. LCC) or in a Corps. During Ex. Valiant Lynx 18 the daily Joint Collection Management Board, regulated by NATO standards, was adapted to Corps level. During this board, the collection effort within the Corps was discussed, based on the collection requirements previously submitted by the subordinate formations with ATENEA. The main output was a collection task list of the Corps for day D+3 (deliberate tasking) and the update of the lists corresponding to days D+2 and D+1 (ad-hoc tasking). In like manner, the ISR support from JFC and LCC or the tasks assigned by the later were also briefed during the board.

ATENEA software is also used by the ISR units (Corps and Division levels) to generate their collection and exploitation plans and submit the different tasks to the proper collection sensors within the units. These units can upload the collected data by the sensors to the CSD (Coalition Shared Database), as well as the exploited data. Since this data is linked to a collection requirement, and in some cases previously linked to an intelligence requirement, personnel involved in IRM & CRM can monitor if these needs are being fulfilled and then inform the requester about the result, providing the indications to get the report by downloading it from the CSD.

A third configuration is COM (Collection Operations Management), whose main objective is to monitor the current daily collection and exploitation plan (day D+0) and, in case of necessity, re-task collection assets as part of the dynamic tasking process. ATENEA software allows a situational awareness of all ISR capabilities within a determined organization including subordinate formations, not only on collection platforms but also on PED (Processing-Exploitation-Dissemination) nodes and other ATENEA stations.

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1 **SAPIIEM** stands for 'Servicios de Apoyo a la Interoperabilidad ISR Española Militar' (Supporting services for the Spanish Military ISR interoperability).

ATENEA software is also compatible with some other software employed within NATO, such as INTEL FS, ICC or JTS. Correctly configured we can, for example, import Battle Space Objects, visualize the daily ATO/ACO or assign ISR collection on designated targets to support the Targeting cycle.

Following ATENEA, SEISMO is the second main component within SAPIIEM. Firstly, this software allows the personnel involved in its utilization to receive the tasks and later gather the data coming from the collection sensors. Depending on different factors, such as capabilities of sensors, the data can be received in the system either in near real time or later downloaded from the CSD. Secondly, SEISMO is used to create the required ISR products, previously specified in the received task. The system facilitates the user's job by offering a set of steps, based on NATO standards, to fill different fields and generating the report. SEISMO is provided with a GIS and has several tools to work on the collected data, obtaining, for example, annotated imagery. The ISR product is finally uploaded to the CSD and the user indicates on the system that the report is then available, facilitating the CRM personnel to monitor the status of the corresponding exploitation task.

As a supporting element within SAPIIEM we can find SIERRA Tools. These tools are created to facilitate 'disadvantaged' users to interact with personnel involved in IRM & CM functions and are available through any station of the mission secret network, since they are a web-based utility.

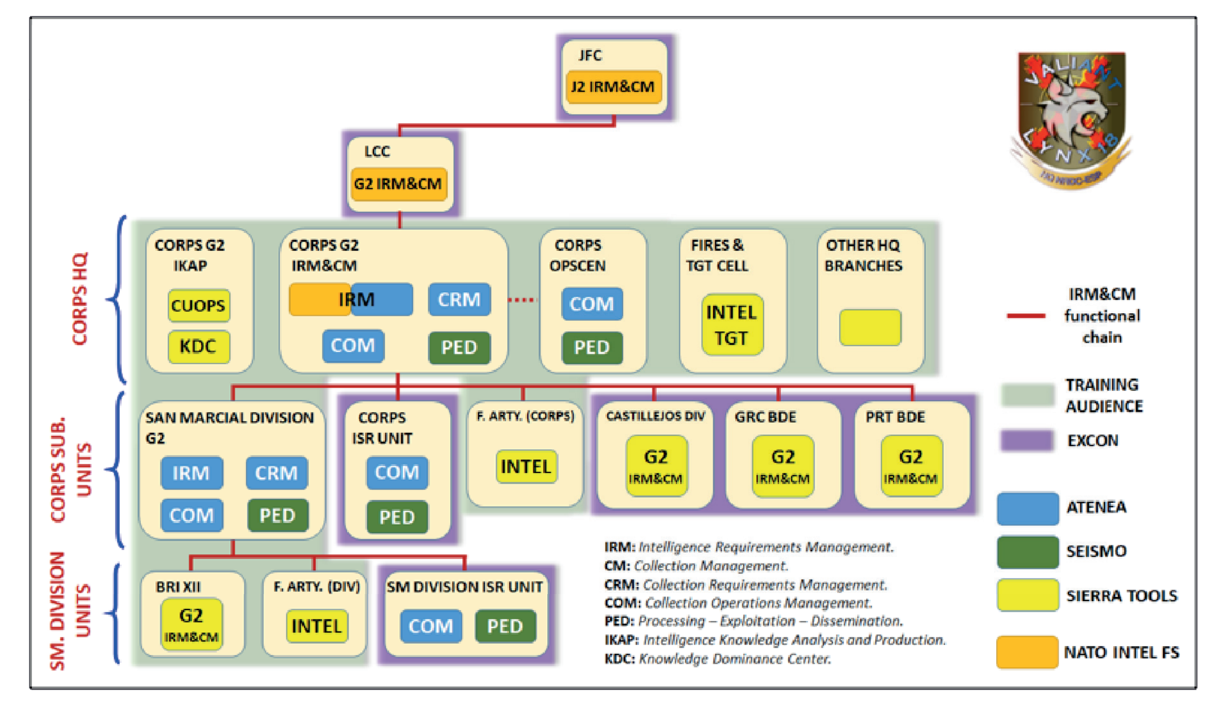
One of the functionalities within SIERRA Tools is Requests WebApp, which allows any user to submit an RFI or ISR request to the corresponding element of the organization. Additionally, the application allows to monitor the status of the requests and also to get the identification number of the reply to download the product from the database.

Another important functionality is CSD WebApp. This application allows any user to query the CSD and get all kinds of ISR products. The search can be done by providing an identification number or by specifying different metadata, such as locations, dates, type of product or intelligence disciplines, amongst others.

Other functionalities within SIERRA Tools are ORBAT WebApp, which allows to manage the JISR structure of the organization, ICP WebApp, to consult the active Intelligence Collection Plan and the status of the different submitted requirements and GAOIs WebApp, created to manage the areas where the intelligence acquisition has to be focused. GMV Company has developed other interesting functionalities within SIERRA Tools, not included in this text, and will create in the future additional applications based on the demands of the users.

During Exercise Valiant Lynx 18, SIERRA Tools were employed by some elements of NRDC-ESP HQ staff, mainly by those involved in the cycles to which the JISR process provides support: the Intelligence, Operations and Targeting cycles. In this sense, active users were located in the Intelligence Knowledge and Production section within G2 INTEL branch, the OPSCEN and the Intel Targeting element, the latter embedded in the HQ Fires & Targeting cell. Other participants in the exercise using SIERRA Tools were the ESP Field Artillery Brigade (supporting Corps and 'San Marcial' Division) and the XII ESP Brigade, as training audience, as well as 'Castillejos' Division, the Greek and Portuguese Brigades, as part of the EXCON.

As it was previously accomplished during Ex. TRJE 15 and BRJP 16, when NRDC-ESP role was as LCC, SAPIIEM has proven to be an excellent tool to support the IRM & CM functions within both the HQ, now working as a Corps, and the subordinate formations. Nevertheless, the main lessons learnt during Ex. VL 18 have in common the necessity of training staffs on IRM & CM procedures as well as on the employment of SAPIIEM, with a great emphasis on SIERRA Tools, as it allows any member of the Staff, and subordinate formations, to submit requests and later obtain the products. In that light, a specific training on these aspects will be developed to support these functions for the upcoming role for NRDC-ESP as a JTF HQ.



Ex. Valiant Lynx 18 – SAPIIEM structure and IRM&CM related functions

CIMIC
role in NATO-led Article 5 operations

Major Elena Pérez González (ESP-A)
G9 Synchro Civ Mil Tac Rep

In line with NATO Civil-Military Cooperation (CIMIC) doctrine, CIMIC applies across all types of operations, being the focus of the effort determined by the mission to accomplish and the situation on the ground. The principles remain the same, but the emphasis may change among the three CIMIC core functions: civil military liaison, support to the force and support to non-military actors and the civil environment.

This year, NRDC-ESP HQ had to certify its performance in a NATO-led Art. 5 Collective Defense Major Joint Operation Plus (MJO+). The exercise Valiant Lynx 18 (VL18) gave G9 STAB branch the opportunity to integrate the traditional CIMIC activities into the HQ planning and execution process.

CIMIC role in operations, as mentioned before, has the same objectives and roles outlined in Art. 5 and Non-Art. 5 Operations. However, some activities could require different level of attention, according to the scale of the following streamlines

the need for enhanced liaison capabilities with the Host Nation (HN): achieving a comprehensive understanding of the political, civil and military domain in the AOR is crucial for effective crisis management;

- the need of CIMIC projects – Quick Impact Projects compared to a Non-Art. 5 Operation;

- the variety of Cross Cutting Topics (CCTs) such as Protection of Civilians, Cultural Property Protection, Building Integrity, Children in Armed Conflict and so on;

- the resilience of the HN, which is a key factor for the mission accomplishment, which could be severely hampered in case of a low resilient HN.

Within many NATO nations, the relationship between NATO force and the HN is governed by long standing bilateral-and/or multilateral agreements, most notably the NATO Status of Forces Agreements (SOFA), constituting the base for Local Agreements (LAs) and Technical Agreements (TAs), which regulate more in detail rights and obligations of the NATO force members. Some NATO nations have their own structures and procedures in place to deal with most aspects of CIMIC in the event of armed conflict. Moreover, a Joint Task Force deployed in a NATO nation can expect that some CIMIC functions will be undertaken by the HN. Support to non-military actors and the civil environment will be a national responsibility and Memoranda of Understanding may cover many aspects of support to the force.

When present, the NATO Force Integration Unit (NFIU) is a powerful tool in order to facilitate the proper coordination and liaison with International Organizations (IOs) and Non-Governmental Organizations (NGOs) already present in the country. This unit also enables the access to the appropriate civil authorities and stakeholders in the AOR, which makes the work easier for the CIMIC representative in the Forward Liaison and Reconnaissance Team (FLRT), who then begins developing the initial Theatre Civil Assessment (TCA) and the Liaison Matrix.

When it comes to the exercise Valiant Lynx 18, G9 STAB Branch had to consider two main aspects: the first one was that NRDC-ESP was not taking part in a nation building process, as the HN was fully resilient; with this premise the second fact was that the HN would have all the Crisis Response mechanisms and bodies in place and functioning, which means NRDC-ESP should only have a second or third response role, should the HN mechanisms fail. In this context, G9 STAB personnel had to focus their attention on identifying the potential gaps in the civil preparedness, so as to assess the risks for the accomplishment of the military mission and prepare the ground for the post conflict phase. To do this G9 STAB established a robust and synchronized interaction mechanisms at all levels with the HN (at central and local level), as well as with the main civil organizations present in the area.

In this respect, it was key for the mission accomplishment the Direct Liaison Authority (DIRLAUTH) that was granted to NRDC ESP to liaise at central level: the key word is “flexibility”. As a matter of fact, the scale and complexity of an MJO+ does not sit easily with the traditional liaison authorities whether national, regional or local. The liaison authority has to be tailored to fit the greater geography and enable those on the ground. Liaison with HN is paramount when conducting Art. 5 operations as well, as it may imply the control of civilian movement, including mass movement of population, and the use of vital infrastructures. This could require coordination at border crossing points if the movement goes outside the HN.

One critical aspect in this scenario could be represented by the availability of limited infrastructure, such as Main Supply Routes (MSRs), which may see a sort of competition between advancing NATO forces and civilian movement away from areas of fighting. This would require close coordination with the HN in understanding the scale and time of such civil movements. MSRs are also critical for civil agencies e.g. humanitarian organization, who may need them for supplying purposes.

This was the case of VL 18, being one important HN road crucial for Transient Center resupplying. To tackle this situation and based on lessons identified in previous exercises, NRDC ESP established and implemented a coordination mechanism with civil agencies in need of using MSRs, mainly consisting in a request to be sent 48 hours in advance to the Corps HQ, which would process it in order to minimize the interference with military operations and logistic flow. This coordination mechanism proved to be very effective and was well welcomed and accepted by civil agencies, ensuring the consolidation of the general consent towards NATO forces.

In this way, G9 STAB played an important role by facilitating the Civil Military Interaction (CMI) among HQ personnel and civil representatives in the AOR: a good example of that was the meeting held between NRDC-ESP Commander and the International Committee of the Red Cross (ICRC) representative in Europe (role player). This sort of meeting not only constitutes an important occasion to share different point of views and exchanging information, but also has a big impact in HN's and civil agencies' perception of NATO's commitment and increases force legitimacy, which always should be taken in account and considered as a "force multiplier".

Exercise VL 18 has once again proved that CIMIC plays a paramount role in Art. 5 operations as well, since the mission accomplishment depends significantly on the civil environment, that must be fully known and assessed in order to minimize the impact on military operations. In this respect resilience is key. NATO measures resilience across seven baseline requirements (Continuity of Government, Resilient Energy Supplies, Resilient Civil Communications Services, Resilient Food and Water Supply, Ability to Deal with Large Scale Population Movements, Ability to Deal with Mass Casualties, Resilient Civilian Transportation Systems).

Understanding the resilience of a nation in depth, by conducting an accurate assessment of all the mentioned seven baseline requirements, is vital to identify any potential situation likely to escalate during a crisis, which may affect a nation's ability to effectively govern and, ultimately, the mission accomplishment. The International Community would be the first to intervene in case of a NATO HN failing in any of the baseline requirements. An understanding of the policy and capability of the response is essential in order for NATO to calibrate its role as a responder, especially when it comes to recently liberated HN territory, which may have a period of ineffective governance immediately after conflict.

As a matter of fact, even when conducting operations in a resilient HN, there could always be some situations which would have a negative effect upon military activities, such as internal displaced unexpected movements of people, the perception of the local population towards the military force and the possible need of supporting the civil environment, that could distract military resources from the mission accomplishment and force the Commanders at all levels to reengage in planning activities.



CORPS LEVEL ENGINEERS

Lieutenant Colonel Jesús Serrano Del Rio (ESP-A)
MILENG PLANS&OPS&INTEL Chief



NRDC-ESP Chief Engineer, ACOS MILENG & Engineer staff during exercise Valiant Lynx 18

2018 has been mainly a period during which the Spanish Engineer Command (MING) has strengthened ties, thanks to the participation of its recently posted Commander (as he is also NRDC-ESP Chief Engineer), and the reinforcement of the Engineer staff with MING's officers covering key positions, in the exercise Valiant Lynx 18.

The lessons learnt in planning processes, conducted in recent years in the Baltic area, have served to sketch the primary role of Engineers for the mobility of the Corps; in fact, Engineer mobility capabilities were identified as the Centre of Gravity for Own Forces during the Tactical Planning



Obstacle breaching in support of XI Brigade

Process of VL18, since the operation took place in spring in the Baltic area, with a terrain full of mud, swamps and forest. Also, Bothnian obstacles and destructions were spread along our Area of Responsibility, but, luckily, we were able to count with two Sapper Battalions, added at the last minute to the Corps' Engineer Brigade, with the specific task of breaching enemy obstacles. Due to the speed of the Corps maneuver and its short duration, the planning process clearly showed that there would be no time to make changes in the Engineers' Task Organization, therefore these two units were attached, from the very beginning of the operation, one each, to the first line Divisions in charge of crossing over enemy defensive lines.

As mentioned earlier, terrain conditions restrained the Corps movements to paved roads, on which, many bridges had been damaged or destroyed by Bothnian withdrawing Forces. This problem



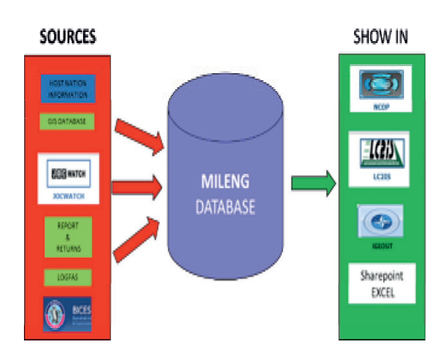
was solved by the rapid coordination provided by the Military Engineering functional chain, which allowed a quick replacement of Assault Bridges which were emplaced by Engineers Battalions belonging to Brigades and Divisions, by Forward Support and Logistic Bridges from the Engineer Brigade. The large use of MABEY assets reduced their availability in the Engineers Resources Parks, but this was quickly solved by procuring new



ramp sets, as the remaining length of central sets was still enough. This fast acquisition, with NATO-shared funds, was possible thanks to the great speed of the Crisis Response Operations Urgent Requirements (CUR) process, the close participation of the Engineer Staff at NATO Command Structure and NATO HQ, all based on personal ties and confidence, built after several years of training, **due to our common experiences and participation in the development of this process from our deployment as part of the MILENG branch of the ISAF Joint Command in 2012.**

Besides the internal training activities, Military Engineering branch has maintained its level of commitment and participation in related forums and activities within NATO and Nations, in order to foster common knowledge and to share procedural improvements among MILENG community. In this sense we highlight the adoption, at NRDC-ESP HQ, of the "System of Obstacle Numbering" developed by LANDCOM Engineers **during 2017**, as a mitigation for the existing gap of a common way of identifying obstacles in NATO land domain. **From then on, this system was tested during all our exercises**, and has been included in our related SOPs.

Also to be mentioned is the profound involvement in the Military Engineering Information Management challenge, facilitated by the presence in this HQ **of expertise acquired during seven years** in utilizing NATO Command and Control tools and databases, **and subsequent lessons** learnt on disseminating and keeping updated data and reports on bridges, obstacles, explosive devices, infrastructure etc. The latest action on this subject was the initial (and successful) testing of the new NATO Common Operational Picture (NCOP) system in importing these databases, carried out also during the execution phase of VL18.



TACTICAL PLANNING PROCESS AT CORPS LEVEL NEW CHALLENGES IN A COMPLEX WORLD.

Major Guillermo Ruiz Castilla (ESP-A)
Former G5 PLANS Section A Staff Officer

Major Jaime García-Trejo Arnedo (ESP-A)
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Developing a tactical level planning process (TLPP), at Corps level, is part of the core capabilities that a corps headquarters (HQ) must train, maintain and master. However, when facing a new TLPP, there is always a set of new developments and processes that make it a unique and challenging activity.

VALIANT LYNX 18 (VL18) was not an exception but an evidence of this reality. In this exercise, NRDC-ESP assumed its original role of tactical land corps in an Article 5 environment and was evaluated as such. In addition, this traditional role also had to tackle the multi-domain environment where a potential conflict would likely be fought and won in the future.

The first problem faced was the absence of a training organization, like Joint Warfare Center (JWC), to lead and support the development of the scenario, the MEL/MIL process and the evaluation, due to the fact that VL18 was an NRDC-ESP exercise, whose Officer Conducting the Exercise (OCE) was NRDC-ESP Commander. This circumstance forced it to play the role of trainers (EXCON) and trainees (Training Audience, TA) in some areas.



Before developing the TLPP, the SKOLKAN 1 scenario was adapted to the approved training requirements. The first challenge was to replicate or to involve the different headquarters and civilian organizations present in Estonia. The upper level, represented by LANDCOM acting as Land Component Command (LCC), was not available to create the upper level planning products before the TLPP. This problem was solved by adapting an existing LCC OPLAN and OPORD from a previous exercise by the entire Corps Operations planning Group (COPG). This solution is not ideal but has the advantage of getting the COPG familiar with the scenario before starting our own corps planning.

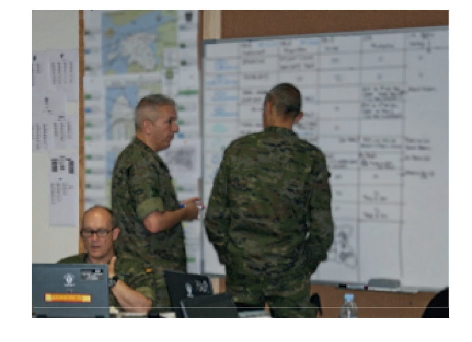
For the TLPP itself NRDC-ESP invited representatives from the adjacent corps, taken on by Multinational Corps North-East (MNC-NE); Host Nation (HN) playing multiple roles as Estonia (EST) / Latvia (LVA) authorities, civilian actors, and military formations, and finally the NATO Forces Integration Units (NFIU) from Latvia (our rear area) and EST Estonia, (the battlefield).

Below the corps, for the first time in years, all attached and affiliated units were called to participate. Most of them, belonging to the Spanish Army, were authorized by the Spanish Army Chief of Staff, actual Officer Scheduling the Exercise (OSE). The allied affiliate manoeuver brigades were also called and both the 1st Portuguese and 34th Greek Infantry Mechanized Brigades, responded in an enthusiastic manner, aiming at a deeper mutual knowledge and testing our interoperability.

The TLPP was developed in a collaborative way, with permanent interaction among all the actors. The physical presence in the Betera Military Base (BMB) of liaison officers (LO) from LANDCOM, MNC-NE, NFIU EST/LVA NFIU LVA, HN EST/ LVA, ESP Divs San Marcial and Castillejos, 1ST PRT Bde, 34th GRC Bde, ESP Army Aviation Force (FAMET), ESP CS and CSS support brigades and commands (Field Artillery Command-MACA, Engineers Command-MING, Air Defense Command-MAAA, 1ST Intel. Rgt. and EW Battalion) prove to be useful and fruitful.

Moving to the TLPP itself, the current challenge was to test the process following the APP-28, Land Tactical Planning Process (draft), still to be published. This new procedure, largely based on the US Army publication ADRP-5, aims to standardize the process among the NATO Land HQs. The process was basically the traditional one, but some key points were stressed:

- An enhanced interaction with external actors, especially the non-military actors, difficult to materialize in an Article 5 environment;
- Focus on collaborative planning at all levels, thus reducing the time for the TLPP;
- Key role of STRATCOM and all the information and influence domain.



Along these enhanced elements in the plan, the most traditional tactical problems were revisited and actualized:

- The complexity of maneuvering with multinational and multilevel tactical formations;
- The demanding targeting process in a warfighting operation;
- The challenges posed by the scenario to develop all functional areas combat roles: limited mobility and counter-mobility assets, timely logistic and medical support, intelligence gathering and sharing, use of the third dimension for intelligence, air defense and airmobile operations, presence of civilian population along the Area of Operations...

The TLPP was developed with strong interaction with the above mentioned LOs, but the lack of further interaction with external stakeholders, due to the nature of VL18, made this external interaction limited and less realistic than in NATO sponsored exercises.

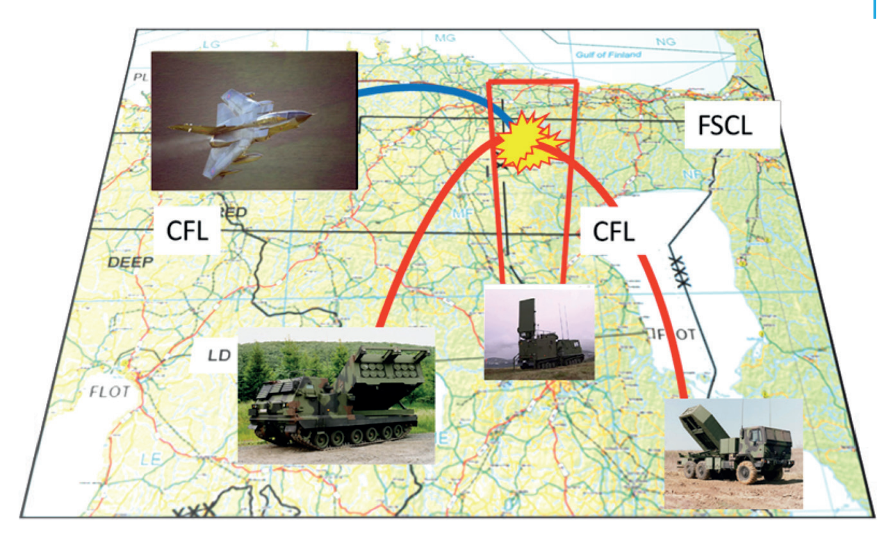
One interesting finding was the early involvement of G3OPS branch within the COPG, allowing a steady and smooth transfer from the planning to the execution phase.

To sum up, collaborative work was promoted, workable liaison with external actors was established and the TLPP was tested and practiced achieving the planned objectives. However, there is room for improving TLPP within NRDC-ESP, as long as we progress towards the next challenge.

TACTICAL JUGGERNAUTS - The NATO CORPS

Empowering the CORPS to be what NATO needs to Fight Tonight and Win!

Major Samuel J. Nirenberg (USA-A)
Fires&TGT TST Chief



During the last 17 years while NATO has been engaged in the war in Afghanistan, the role of Joint Fires and Targeting has been relegated to discussions centered on the mitigation of collateral damage and games of whack a mole against Taliban Leadership. Within the Land Domain of NATO, for the most part, we have lost the ability to have a discussion on joint targeting and fires that isn't centered on Counter Insurgency Operations. This is most apparent at the NATO School in Oberammergau where the NATO Joint Targeting Staff Course has centered its instruction on Afghanistan centric operations discussing time sensitive targets as if they are solely Taliban Leaders and Collateral Damage Estimates on enemy tank formations[1]. Thankfully this instruction runs counter to what NATO exercises and conferences express as the future of NATO operations. Most NATO land exercises to date have focused on Multi-National and Multi-Corps Article V operations[2]. These exercises are a good way of getting NATO and individual nations to think about the Defense of Europe on a more linear battlefield. Without updated instruction at the school house and updated doctrine thought, NATO is left to fight future wars with the knowledge and experiences we have solely gained through our operations in Afghanistan.

One of the biggest capabilities and knowledge gaps that has been identified is NATO's ability to fight above the Division level[3]. The CORPS has been largely forgotten and assets that had in decades past been assigned to the CORPS (CORPS Artillery, ISR) no longer exist or have been reassigned to the Divisions[4]. This was done in an effort to allow the Division to train and deploy with its own organic assets. As a result there are units and formations within NATO that minimize the CORPS role in the execution of Deep Operations. This is evident in NATO CORPS manning where the AOCCs are manned as a planning elements instead of the execution cells that the CORPS require them to be. During Trident Javelin 18 LANDCOM also disregarded the role of its CORPS in the deep fight[5] when they focused their efforts of joint targeting on the area that lies between the Coordinated Fire Line (CFL)[6] and the Fire Support Coordination Line (FSCL)[7]. If the Divisions, CORPS and LANDCOM all believe that it is their responsibility to prosecute the deep fight between the CFL and FSCL who is executing the close[8] fight and who is ensuring that the Joint Force is adequately shaping land targets beyond the FSCL?

If NATO is going to reestablish the CORPS as the building block of NATO Article V land operations, as it seems NATO exercises intend, then updates need to be made to both NATO fire support doctrine and manning to ensure CORPS are adequately manned and empowered to assume the role. This article recommends two fire support doctrine changes that, if implemented, will help define the role that each land echelon plays in deep operations from the Brigade to the Land Component as well as recommended minimum manning and equipment requirements to ensure success in the deep area.

DISCUSSION RECOMMENDATIONS

Though it is understood by SOME that Army Brigade Headquarters and above can establish their own Coordinated Fire Lines this is not common practice. In the AArtyP-5 the CFL is defined but nowhere in the definition does it say who SHOULD establish CFLs and the best practices for integrating it into a maneuver plan. As a result, many units either fail to create a CFL of their own, or, if they do, they fail to notify their higher headquarters of its establishment. In both of these situations we unnecessarily restrict our own ability to seek and destroy the enemy.

1 Observation made during authors attendance at the NATO Joint Targeting Staff Course in Oberammergau from 26 February to 02 March 2018.
2 Exercises Observed or Participated: Trident Javelin 18 (LANDCOM), Valiant Lynx 18 (NRDC-ESP)
3 Observation made from nearly 14 months being assigned to NRDC-ESP and executing both LANDCOM and CORPS level exercises.
4 Observation made from nearly 14 months being assigned to NRDC-ESP and executing a CORPS validation exercise (VL18).
5 ATP-3.2.1, Allied Land Tactics, Edition B Version 1, November 2009, Deep Operations (2-8) operations conducted against forces or resources not engaged in close operations.
6 AARTYP-5, NATO FIRE SUPPORT DOCTRINE, Edition B Version 1, November 2015. Coordinated Fire Line (CFL) (5-18) The CFL is a line beyond which conventional, indirect, surface fire support means may fire at any time within the boundaries of the establishing headquarters without additional co-ordination.
7 Fire Support Coordination Line (FSCL) (5-17). Within an assigned area of operations, a line established by a land or Amphibious force commander to denote coordination requirements for fires by other force elements which may affect the commander's current and planned operations.
8 ATP-3.2.1, Allied Land Tactics, Edition B Version 1, November 2009, Close Operations (2-9) Close operations are operations conducted at short range, in close contact and in the immediate timescale.

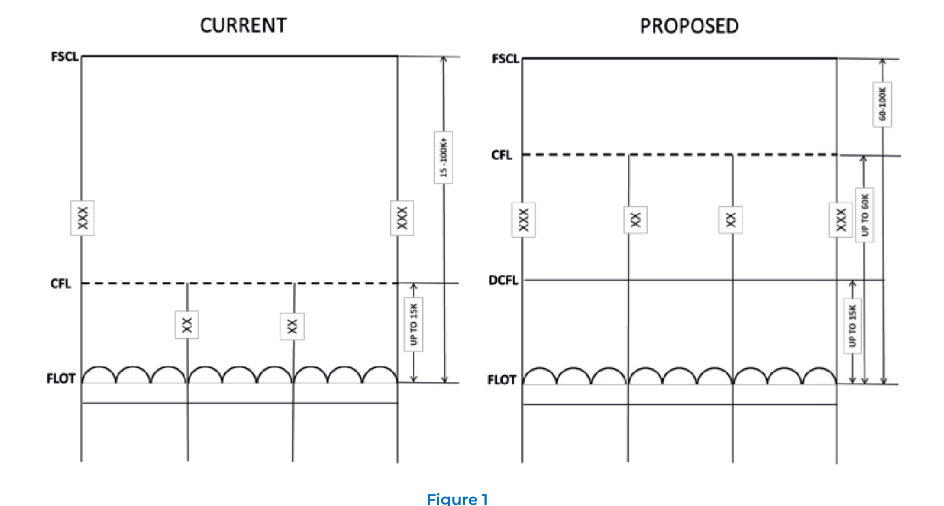


Figure 1

If a CORPS or Division HQ fails to establish a CFL of their own and they rely on the LANDCOM or CORPS CFL to facilitate their fires a lot can go wrong. The process for moving a CFL is often tied to the establishing headquarters targeting cycle. This is done to ensure that the CFLs movement is synchronized across the subordinate headquarters. Though this makes sense to do, issues arise when you have Brigades, Divisions and CORPS using a LANDCOM or CORPS CFL as a de-facto boundary separating close and deep operations. As a result, one of two things are almost always true:

1. The CFL is placed too close to the Forward Line of Troops (FLOT) and its movement is not fast enough to prevent the loss of momentum by the attacking brigades. Or

2. The CFL is placed too far away from the FLOT providing area of sanctuary for the enemy to attack the advancing brigades with their longer range artillery systems.

Though the CFL is a permissive fire support coordination measure for surface to surface fires, the CFL is also a restrictive measure that serves as a de-facto limit of advance for ground forces. No unit wants to move friendly formations across a CFL without first conducting detailed coordination with the establishing authority for fear of fratricide. As a result a ground unit's movement near the CFL is often slow and measured.

If a Brigade or Division establishes a CFL of their own, but does not notify their higher headquarters of its existence, unnecessary time is wasted by higher headquarters clearing ground before executing counter fire or other dynamic targets within a Brigade or Division's battlespace. This was a lesson that the United States Marine CORPS learned, years ago, in respects to air operations in relation to the Fire Support Coordination Line. The Marine CORPS found that the FSCL was often pushed too far from the FLOT outside the range of their surface to surface fire platforms. As a result the enemy was provided unintended sanctuary from air fires giving them the time and space necessary to attack friendly forces without fear of timely reprisal. To solve this problem the Marine CORPS created a measure that allowed the Marine Air Ground Task Force aviation assets to attack surface targets short of the FSCL without additional coordination. This permissive fire support coordination measure was called a Battlefield Coordination Line[9].

RECOMMENDATION 1

To both prevent the loss of momentum, and to facilitate the destruction of enemy forces short of the CFL for the reasons outlined above, it is recommended that NATO Fire Support Doctrine be updated to include a new fire support coordination measure called a Division Coordinated Fire Line (DCFL). By establishing this fire support coordination measure NATO would ensure Divisions controlled the rapid movement of their forces across the battlespace and without being constrained by the CORPS or LANDCOM targeting cycle. Establishing this fire support coordination measure in NATO Doctrine will also alleviate any confusion as to who owns the coordination measure and the timing and approval process necessary to move it. See figure 1 to see the current and proposed battlefield geometries.

Proposed Definition: The DCFL is a line beyond which conventional and indirect surface fire support means may fire at any time within the boundaries of the establishing headquarters without additional coordination, as long as airspace has been cleared by the designated airspace owner. The DCFL will be established by a Division HQ during the planning process and then refined and moved as necessary after consultation with Brigade HQs to ensure that the line will not hinder but support the tempo of the close fight.

Best Practices: Each Division will establish its own DCFL within its own boundaries but only one DCFL can be active within a Division's area of operations at any one time. Movement of the DCFL needs to be dynamic and not be tied solely to the Division's targeting process, in order to facilitate the rapid movement of friendly forces across the battlefield. The decision to move the DCFL should be made within the Division operations center in coordination between the Chief of Operations and the Deputy Fire Support Coordinator or his or her delegated representative. For practical purposes the DCFL should move 2-3 times before the CFL and FSCL are moved during the course of an operation. Figure 2 below depicts how the DCFL would look on a linear battlefield within a Multi-Division CORPS' area of operations.

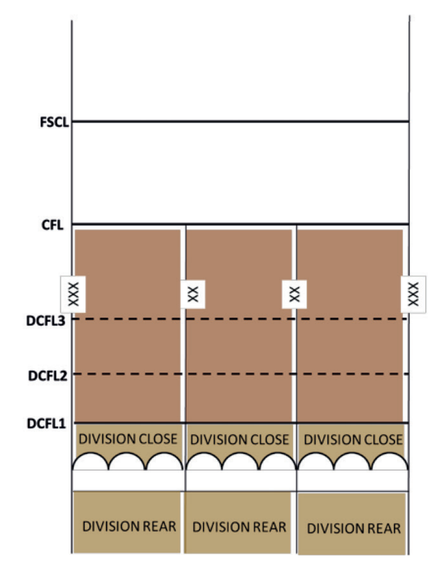


Figure 2

9 MCWP 3-16, Fire Support Coordination in the Ground Combat Element, November 2001, Battlefield Coordination Line (B-2)

RECOMMENDATION 2

As mentioned previously NATO Brigades, Divisions, CORPS and LANDCOM have demonstrated through various NATO exercises their desire to target enemy formations between the CFL and the FSCL to prosecute the deep fight. If all land echelons focus their fires and targeting assets 15-280K away from the FLOT not only will air space deconfliction be a nightmare but friendly targeting assets will be used in an overly redundant and an often wasteful manner. Once the DCFL has been added to NATO doctrine, NATO should then update their Joint and Land Targeting doctrine to clearly define areas of responsibility for deep operations in relation to fire support coordination measures for each echelon.

Below are the recommended areas of responsibility for deep operations for each headquarters from the Brigade to the Land Component HQ.

Land Component Command – The LANDCOM Fire Support Element needs to be responsible for the integration, synchronization and coordination of fire support delivered by air, maritime and land assets in support of a common land operational objective. In order to do this LANDCOM needs to be focused on the whole land domain and not just a single swath of land 15-200k from the FLOT. Instead LANDCOM should ensure, through their efforts that the area beyond the FSCL is adequately shaped by Joint Assets (which includes ATACM missiles) prior to the CORPS taking responsibility for the area when the FSCL moves.

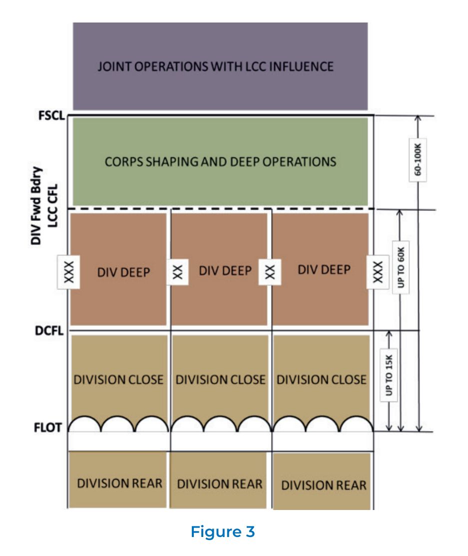


Figure 3

CORPS Headquarters. The CORPS deep fight is the area between the CFL and the FSCL within their assigned area of operations.

Division Headquarters. Division deep operations are in the area between the DCFL and the CFL.

Brigade Headquarters. There is no deep operational battlespace for a Brigade. The Brigade should be concerned with executing the close fight between the FLOT and DCFL.

In Figure 3 you will see how the battlespace can be broken up to depict deep operations from the Division to the LANDCOM HQ as outlined above.

RECOMMENDATION 3

It is understood that not all NATO CORPS headquarters have the same capabilities and assets at their disposal. There are some CORPS, like the United States III CORPS, who have long range fire capabilities at the CORPS level. There are CORPS that only have long range fire capabilities at the Division level. Some nations, like Spain, don't have long range fire capabilities at all. That being said, the recommendations made are based on the assumption that the CORPS has as a minimum long-range fire and ISR capabilities from which they can adequately shape the deep fight.

If long range fire and ISR capability assets do not reside at the CORPS level but do at subordinate Divisions, then the CORPS needs to look at how Task Organization changes could be made to support both the close and deep fights. If the capabilities do not reside at the CORPS nor Division levels, then LANDCOM needs to look at how those CORPS are employed or task organized during an Article V Operation. CORPS AOCCs also need to be manned and equipped to be able to provide positive control[10] of airspace within the possibility of assigned land airspace control areas[11]. The use of airspace control areas for land operations is a discussion that should be had in another article altogether. The use of ACAs can only be achieved if AOCCs are manned to assume positive control of assigned airspace.

At a minimum, every CORPS, which is being asked to engage a peer threat on the battlefield, should have two battalions of long-range fire capabilities similar to MLRS or HIMARS launchers, a combat aviation brigade with lift and attack aviation capabilities and enough UAS and ISR platforms to effectively target and engage enemy formations between 60 and 200 kilometers from the forward line of troops (FLOT). If a CORPS cannot do this then all they are, are Middle Managers[12] who can be effectively cut out of the loop in order to save money and resources.

CONCLUSION

By establishing the DCFL in doctrine, NATO will have a legitimate fire support coordination measure that can be used to define deep areas of operations for all echelons from the Brigade to the Joint Force HQ. By adequately defining deep operations at each echelon we are undoubtedly making our force not only more lethal but more agile ensuring that we don't employ our targeting and fires assets in a wasteful or overly redundant manner. These updates to doctrine will also go a long way in empowering NATO CORPS to execute the deep fight and shape the battlefield so that when the Brigades are advancing on an objective all they see are burnt out hulks and a retreating enemy.

The NATO CORPS can be a very lethal organization if it is manned, trained and equipped properly. Unfortunately as noted above not all CORPS are created equal. Many CORPS have been neutered over the last decade for reasons that have been outlined above. Thankfully NATO has begun the process of rebuilding their CORPS into the tactical juggernauts of decades ago. An adequately manned, trained, equipped and empowered CORPS will make that a reality.

10 ATP-3.3.5.1, Joint Airspace Control Tactics, Techniques and Procedures, Edition A Version 1, April 2016, Positive Control (2-1) Positive control is a method of ASC which relies on the positive identification, tracking and direction of air vehicles and control of Air Defense (AD) weapons within a designated airspace, by an agency with the appropriate authority and responsibility.

11 Airspace Control Area (5-11) As a means of planning or dividing responsibility, the ACA may designate Airspace Control Areas (ACAR) that are laterally defined by the boundaries of an area of operations.

12 Peter Aucoin (1989), Middle Managers, Institute of Public Administration of Canada, p. 191 ISBN 9780920715024. Middle Management is the intermediate management of a hierarchical organization that is subordinate to the executive management and responsible for at least two levels of junior staff.

Exercise Valiant Lynx 18 - A further step towards Collective Defense

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G7 TRG&EXER EXER Team A Staff Officer

Therefore, just as water retains no constant shape, so in warfare there are no constant conditions.

Sun Tzu, The art of war.



As we close the final reports from our last exercise Valiant Lynx 18 (VL18), we are again reminded of the challenges military exercise planners face daily, which are ¨constant changes in security situations¨. This dynamic makes it difficult for experts as they try to create the right conditions to give commanders the ability to exercise and challenge their staff for upcoming missions (Ref.a).

In a recent conference, General Perkins echoed the thinking-codifying formulation of General Sullivan two decades earlier: "The Army doesn't have the luxury of just thinking about the future. We're not a think tank. We actually have to produce the future." (Ref.b).

Nowadays, this is the key to success when trying to apply the well-known principle of ¨train as you fight¨. As a result, Training and Exercise Branches are in a continuous process to enhance our future exercises to better replicate more realistic and credible training for Collective Defense.

In the near future, our command will begin training towards the operational level of command. This causes additional challenges and is far more complex. In 2014, NRDC-ESP experienced these challenges as we were preparing for the JHQ role. As we move forward, we expect to face even more challenges as the recent additions in NATO have to be integrated and trained accordingly.

However, before we dive deeper into this issue, let me highlight a few details about VL18 as a major Spanish effort. Following NATO's guidance and procedures, ESP linked different types of exercises (CPX and LIVEX) into a national sponsored exercise.

VL18 was a great example of combining two different exercises into one. During VL18, the ESP Armoured Brigade ¨Guadarrama XII¨ commanded by the ESP DIV ¨San Marcial¨ HQ (under NRDC-ESP command) deployed 650 km away from the Brigade location. This situation created real life logistic and C2 challenges that were successfully overcome, as in the end, more than 5000 troops trained together under one command. The training was conducted in a modern high intensity warfare operation in which interoperability and common procedures of such a diverse collection of military are paramount to win battles. VL18 provided the "train as you fight" exercise with a realistic CPX and a Division command controlling a real Brigade over hundreds of kilometers in the LIVEX.

Indeed, the deep involvement of the ESP Army for more than one year in the preparation process, provided an excellent opportunity from the planning to the execution phase. ESP was successful in integrating all subordinate HQs and Units, synchronizing training calendars, planning time allocation, requiring tactical documents and establishing a clear link between scenarios for the CPX in Skolkan and the LIVEX in the Zaragoza Training Area (mapping). Additionally, this allowed for a common Command and Control System to accomplish all the Exercise/Training Objective VL18 also providing the perfect venue to test the integration of new Spanish systems, like the ESP Artillery System TALOS, managed by the Field Artillery Command HQ, providing a real Common Operational Picture (COP) including friendly-force tracking. It also provided the opportunity to improve existing capabilities like air-land coordination, accomplishing a number of tasks that armies around the world perform during major combat operations.



Moreover, ambitious as it should be, we managed the difficult task of integrating the Host Nation Estonia into the real-life scenario, managing time, space, forces and effects IOT to make the Skolkan scenario complex and realistic enough for the exercise. It cannot be emphasized enough that we cannot win present conflicts, including Collective Defense, without the support of the local population; you can be a defeater, but then you need to reconstruct - an issue which is rarely discussed- but Skolkan offers the opportunity for the military environment to try to understand the consequences and to mitigate the negative effects of high intensity warfare operations (Ref. c).

It must be noted that the quality, rigor and professionalism of the Response Cells (RCs) personnel from affiliated Units (POR and GRC), strong HICON (LANDCOM) constitutes the key to succeed in a CPX as they prepare all reports, other staff products and support the Training Audience battle rhythm activities, like a real Unit in operations. Consequently, EXCON must be part of the play providing the required realism and avoid being the only missing link between the Training Audience and higher, adjacent and subordinate HQs.

Needless to say, realism becomes something extremely important, meaning that, moving power point slides in a CPX, turns into the enemy of the "train as you fight" principle. When you prepare an exercise with 5000 troops on the ground with all logistic implications, then, purely theoretical matters show their ruthless face.

Hence, national exercises, like VL18 in combination with allied efforts to support Nations, present the best forum to train and exchange processes and a lot of specific tactical procedures, impossible to relate in this article, creating the basis for an intensive future collaboration and, in the end, harmonizing interoperability.

Now it's time to move forward and, clearly, the operational level of command is where most campaigns fail to achieve the political and public view of success as stated in the JHQ Handbook recently published by JWC (Ref. d) GRF (L) HQs generally start the transformation process with an assessment of the Corps HQ (and possibly LCC, where appropriate) capabilities compared with an assessment of the capability requirements for the NFS JTF HQ. This comparison marks the chosen approach to transformation and it will vary from HQ to HQ, but the key areas in which transformation must occur are the same: mindset, processes, and manning.

GRF(L) HQs preparing to take over the JTF HQ role should recognize that much of the NATO doctrine and guidance for JTF HQs is written in support of the NRF framework; a framework which assumes that the GRF(L) HQs possess the same range of capabilities and number of personnel as the NCS JFCs.

As a result, changes in key areas may drive subsequent changes in other areas, such as infrastructure or training. However, the joint evaluation led by SHAPE will again become a demonstration of our capabilities using the integrated JHQ model, including a reduced Command Post footprint, where resilience in a tangible battle rhythm and survivability surely will be a crucial cornerstone for success in modern warfare.

The JHQ role preparation is challenging but, perhaps, the current doctrine to prepare NATO exercises requires a deep analysis to condense the amount of ¨compulsory¨ activities and documents (described in the exercise directive) in order to facilitate a faster coordination among stakeholders even during the stand-by phase.



VL18 is to be followed by the JHQ preparation exercises, but also participation in ESP national and major NATO exercises during the JHQ stand-by period are aimed at increasing our common understanding and, at the end of the day, moving to attain the joint "flavour" in the benefit of Collective Defense.

Jointness leads to multinational systems and personnel ¨talking¨ to each other. As individuals we must understand the difference between 'hearing' and 'understanding'. As simply as I am highlighting it, crucial NATO Standard English has its limitations and the speakers need to ensure the listener has understood and not just heard the information, particularly with increasing numbers of national exercises mixed with NATO ones. This brings a huge responsibility to use common English, to achieve what in the end counts, interoperability in a multinational NATO environment (Ref. e) to an effective command.

Just one last insight, we cannot do everything with the resources available to us and we must, therefore, focus on our training and overall readiness. We will need to continue the significant shift towards our Collective Defense core task (Ref.f) and as such the NRDC-ESP JHQ TF efforts and energies perfectly fit in an all-domain warfare.



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LOGFAS WITHIN NRDC-ESP HQ:

the increase of the implementation of LOGFAS tools within NATO and the related use in our HQ

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INTRODUCTION

The Logistics Functional Area System (LOGFAS), approved and used as the main logistics tool for planning multinational deployments, execution, control and transfer of logistics information during NATO operations and exercises, was in its early development phase when NRDC-ESP introduced it in 2002, during the headquarters' IOC/FOC (Initial / Full Operational Capability).

At the beginning of LOGFAS, ADAMS (Allied Deployment and Movement System) was the main module. Centralized in the MOV & TPT Section of G4; ADAMS served as a planning tool for deployment plans and on-screen visualization and analysis.

As the new modules were implemented in NATO, the use of LOGFAS was also expanded to other sections within G4 and other HQ branches, employed in certain areas during the planning and execution phases of exercises (i.e. Movement Control, Logistic reporting, Supply control, etc.).

Our Rear Support Command (RSC/-JLSG) soon became aware of the capabilities of the LOGFAS group of programs and the benefits that modules, such as CORSOM (Coalition, Reception, Staging & Onward Movement) or EVE (Effective Visible Execution) could provide. Since then, both RSC/JLSG and G4 have fully implemented the use of these tools.

Subsequently, the SPM (Supply Panning Module) and LOGREP (Logistic Reporting) were implemented within HQ, becoming essential during all the phases of our exercises. These exercises served to establish NRDC-ESP as a Headquarters within the NATO Force Structure, while simultaneously integrating LOGFAS and formalizing its use.

CURRENT LOGFAS STRUCTURE IN NRDC-ESP

The great momentum LOGFAS has built in recent years, not only within NATO but also the implementation at national level by many countries (including Spain), has resulted in the in the establishment and consolidation of a well-defined LOGFAS structure within the HQ, with G4LOG and the RSC/JLSG (both under the Support Division) as the pillars of the aforementioned structure. Currently our intention is to extend its use to other branches such as MILENG, GMED, G1 and even to the operations domain by providing the ability to make queries in Force Holdings, movements in EVE, etc.



EMPLOYMENT

LOGFAS is more than just a set of bits displayed on a screen or a simple reporting program. It is a complicated tool that allows the HQ to undertake the following critical logistics functions:

- Strategic movement's analysis and planning from home base to the port of debarkation.
- Analysis and planning of reception, staging and onward movement (RSOM).
- Execution and management of strategic deployment and RSOM operations.
- Logistics analysis, planning, execution, monitoring and reporting during the preparation, deployment and in-theatre sustainment of forces.

Products/ Responsible	Scenario: Map Project, geolocs, networks/routes, Planned Movements	Create Forces Force Profile & Holdings	DOS estimation	LOGFAS Manager	RSOM Planning/ Planned Movements
G4 PLANS		X			
G4 M&T	X			X	
G4 Sup&Maint			X		
RSC/JLSG					X

EXECUTION:

Task/ Responsible	LOGREP	Sustainment Control	LOGFAS Manager	MovCon	RSOM Control
G4 OPS	X				
G4 M&T			X	X	
G4 Sup&Maint		X			
RSC/JLSG		X			X

EDUCATION

NRDC-ESP covers all LOGFAS areas and tasks with its current Peace Establishment personnel. The idea of centralizing all LOGFAS knowledge in two or three people is a thing of the past. Today, more than ever, it is a requirement that a large part of the HQ's logisticians have a minimum training, at least, to enables them to work either as an operator or analyst, within their respective area.

Currently, after having made training a paramount effort, all personnel who require it have completed the LOGFAS Fundamentals Course. In addition, personnel using more specific modules such as ADAMS, CORSOM, EVE or SPM are in the process of completing training in those tools. For training, we rely on NATO CIS School in Latina, internal training sessions held in the HQ and Spanish staff courses offered by the Spanish Army Logistics Academy.

In order to keep our subordinated units trained on LOGFAS requirements for operations and exercises, the most qualified personnel of this HQ frequently teach LOGFAS courses, focused on the tasks to be performed by them during exercises.

As a culmination to the planning phase and logistical preparation of the exercises, a LOGFAS seminar is held. All operators and analysts who will be part of the LOGFAS structure during the execution phase will be invited, resulting in a common understanding of LOGFAS requirements during the exercise.

LESSONS LEARNED

Throughout the years many LOGFAS' lessons have been determined, some of which, most important for HQ, have taken the form of lessons learned consolidating as indispensable procedures for the proper functioning of this Functional Area Service:

- Maintain the appropriate level of training of key positions with LOGFAS, responsibility and increased knowledge of this tool which all HQ Logistic personnel must have.
- NRDC-ESP LOGFAS Team should increase direct contact with our Subordinate Units, supporting and training their LOGFAS personnel.
- During the exercise preparation phase, subordinate Units/HQs must provide on time LOGFAS products (Force Profile and Holdings, Geolocs, Networks /Routes, etc.), following NRDC-ESP detailed guidance.
- For the exercise execution phase, Units/HQs should appoint trained LOGFAS operators and analysts.
- Improve the quality of the LOGFAS Data Base as much as possible for each exercise or operation.
- Host a final LOGFAS seminar previous to the execution phase (at least one representative per Unit) which could be integrated as a working group during the Logistic Seminar.

CONCLUSION

In recent years and especially since our certification as Joint HQ (Trident Jaguar 14), through the great effort made during the Trident Juncture 15 exercise and the equally significant deployment in Poland for Brilliant Jump 16, the evolution of LOGFAS employment within the NRDC-ESP has become clear increasing our knowledge and recognition of its use daily. This must be considered one of the best logistics outcomes for NRDC-ESP in its seventeen years of operation under the NATO flag.

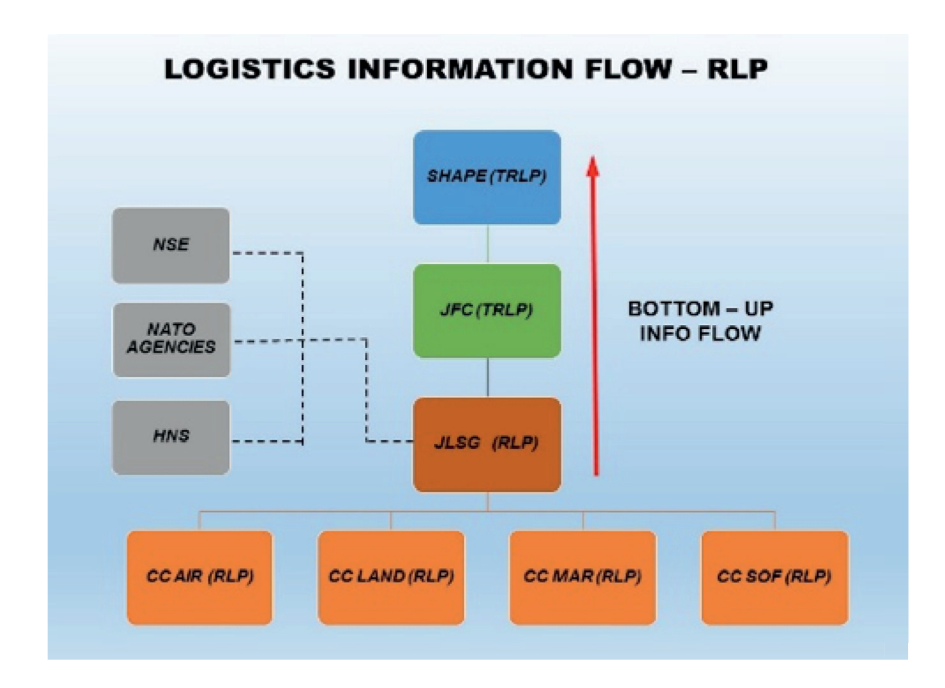
RECOGNIZED LOGISTIC PICTURE (RLP) VISIBILITY OVER THIRD LINE OF SUPPORT

Lieutenant Colonel Adolfo Giner Abanses (ESP-A)
RSC JMOV&TPT Chief

In the recent past, NATO has been going through a process of revision and adaptation of its methods and procedures to be more efficient, effective and responsive, coming up with a new Defense Planning Process, which has had an implication into the operational planning process. Logistics support for NATO operations as a key part of this planning process, takes into consideration the new framework to overcome the complex challenges faced in any operation including setting the theater, infrastructure improvement, distribution and logistics chain management, as well as the implementation of logistics information systems, which must be capable, in a timely fashion, to provide and share the logistics situation and the required visibility over the resources, allowing the Commander to exercise his authority and prioritize the logistic effort to meet the operational requirements.

These areas are not exclusively considered during the planning process but also over the course of operations, where it is essential to provide a clear picture of the logistic situation at any given time, including a comprehensive appraisal of operational readiness, availability and suitability of units, assets, infrastructures, as well as stakeholders involved in the logistic process.

In both cases the asset visibility, which can be defined as the ability to know the identity, location, quantity and status of units, personnel, equipment and material at a certain time when committed to a NATO operation[1], or the ability to provide decision makers and operators with accurate information in real time or near real time, over conveying locations, movements, status and resource identification information[2], is the cornerstone to identify parameters, situations, conditions that might adversely affect the logistic situation and therefore military operations.



At Theatre level, or third line of support, JLSG reports on its activities and the current status of theatre-level logistics to the COM JTF through the Commander's assessment report and the recognized logistic picture (RLP)[3]. The RLP gathers a collation of data from different levels, Components and logistic stakeholders (both military or civilian), based on logistic reports and data compiling an information package contributing to the NATO Common Operation Picture (NCOP) and supporting the decision making process.

To produce a coherent and comprehensive RLP, the JLSG Staff needs to gather data from different sources of information, such as Military Components, NATO agencies, Contributing Nations, Host Nation, as well as all those provided by a large number of civilian organizations and governmental institutions related with the activities conducted by JLSG, which will be linked through a well-developed liaison network. As it can be envisaged, a clear definition of information standards, the design of the different info-flows and, more importantly, the willingness of the different logistic actors to share their data, are key elements to capture the significant and relevant information which will be the foundation of the RLP.

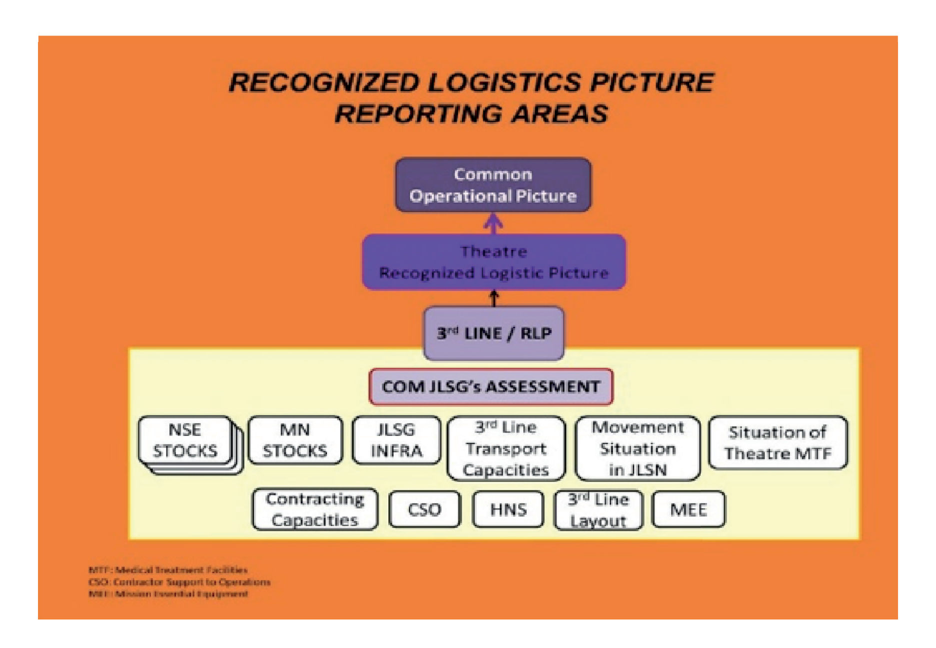
Currently LOGFAS (Logistics Functional Area Services) encompassing tools for planning, analysis, execution and reporting, is the main software for planning and to exert the control and monitor the logistic situation for a given operation, However, the amount of information managed by LOGFAS and the functionalities required, have strained the capabilities of this relational database management system, revealing the need to develop different concepts. In this regard, NATO is in the process of

1 In accordance with AJP 4.11 NATO Asset Visibility
2 As mentioned depicted in "A Framework of Recognized Operational Support Picture for Asset Visibility" (Canadian Department of National Defense)
3 In accordance with AJP 4.6 Allied Joint Doctrine for the Joint Logistic Support Group

developing a new logistics information environment, the Logistics functional Services (LOG FS) which will replace the existing LOGFAS. The new system is expected to maximize the use of the existing resources and capabilities from previous software, providing the functionalities needed for the command and control of the logistics components, including the provision of the logistic information into a Common Operational Picture.

As mentioned previously, reliable and quality data are the building blocks to shape a comprehensive RLP, however, the fact remains that neither format nor structure for RLP is defined in any NATO publication[4]. Nevertheless, it is clear that certain areas will be more in-depth considered, pending on the operational phase in which the troops are engaged or the operational tempo. In this regard, when setting up the Theater or in the initial troops arrival, the RSOM process and the associated infrastructure (APODs, SPODs, Marshalling and Staging areas) will have a leading role in the reporting activities, while the importance will shift to resources inflow and sustainment activities as the operations progress, providing visibility over the status of the Lines of communications and stock levels in Theater and in transit.

Based on JLSG responsibilities and logistic activities to carry out in the Third Line of support, certain reporting areas have been identified and they will be the foundation for the JLSG Commander when providing the JLSG assessment. These areas include as follows[5]:



- National Support Elements Stocks
- Multinational Stocks
- JLSG Infrastructure
- Third Line Transport Capacities
- Air – Sea – Land Lines of communications status
- Situation of Medical Treatment facilities under JLSG responsibility.
- Contracting support to Operations
- Host Nation Support
- Mission Essential Equipment

NATO Exercises and Forums[6], in which NRDC-ESP JLSG personnel have actively taken part, have proven a great opportunity to reap the benefits based on other NATO HQs experiences, multinational engagements and different national perspectives about the information, timeframes, structure, format and assessments to include in a RLP. There is a consensus across NATO logisticians that RLP should reflect information about the logistic processes performed in the Third Line of Support, being capable to provide visualization in a near real time accurate picture of the logistic situation, to monitor and track the changes occurring over time and forecasting the future requirements and demands on the logistics chain management.



Both in NATO exercises and operations, as well as from the different national perspectives, a lot of effort and resources have been allocated to improve the collation of data activities and the associated databases management systems, which leads to a definite improvement of the data quality, allowing to identify inefficiencies, redundancies and simplify and streamline the logistic processes. However, it should be recalled that the final aim of the RLP provided by the JLSG, is none other than to deliver an assessment about the Logistic situation in the Third Line of support based on different data and information provided by the logistic stakeholders involved, enabling superior staff at the JFC and JTF HQ to plan, control and coordinate theatre logistic operations[7].

4 See BI-SC Reporting Directive Volume V
5 Source 2018 JLSG Orientation Course
6 Trident Javelin 2017, Brilliant Joust 18, JFCBS BST , LOGFAS Users Forum, 2017 JLSG Orientation Course
7 In accordance with AJP 4.6 (B) Allied Joint Doctrine for the Joint Logistic Support Group

G-MED. THE MEDICAL BRANCH.

Lieutenant Colonel Tomas J. Ruiz Ibañez (ESP-A)
ACOS GMED

Within the Support Division, G-MED develops all General Staff actions related to Medical Logistic Function and collaborates in the medical aspects of NRDC-HQ ESP activities. The Branch has to be adaptable to HQ NRDC-ESP's different roles and capabilities. G-MED performs the same tasks in the National side of Spanish HQ (Spanish personnel). G-MED STRUCTURE.

- ACOS G-MED is acting in two key roles:

  - MEDAD is responsible for providing timely and accurate specialist medical advice to their commanders, ensuring that the commander and commander's staff are properly aware of health and medical implications of their actions, as well as any force health issues connected to each operation, planned or running. Although MEDAD is only a member on call of the Special Advisory Group (SAG), direct access to COM and other staff key elements is ensured as guarantee of effective medical assessment, especially related to critical threat situation (high risk of epidemic, MASCAL, CBRN).

  - MEDDIR (under the command and responsible to DCOS Support) is the head of the Medical Organization, responsible for timely medical planning and coordination and defining the necessary medical support system and appropriate requirements to be met by the attached forces for each operation.

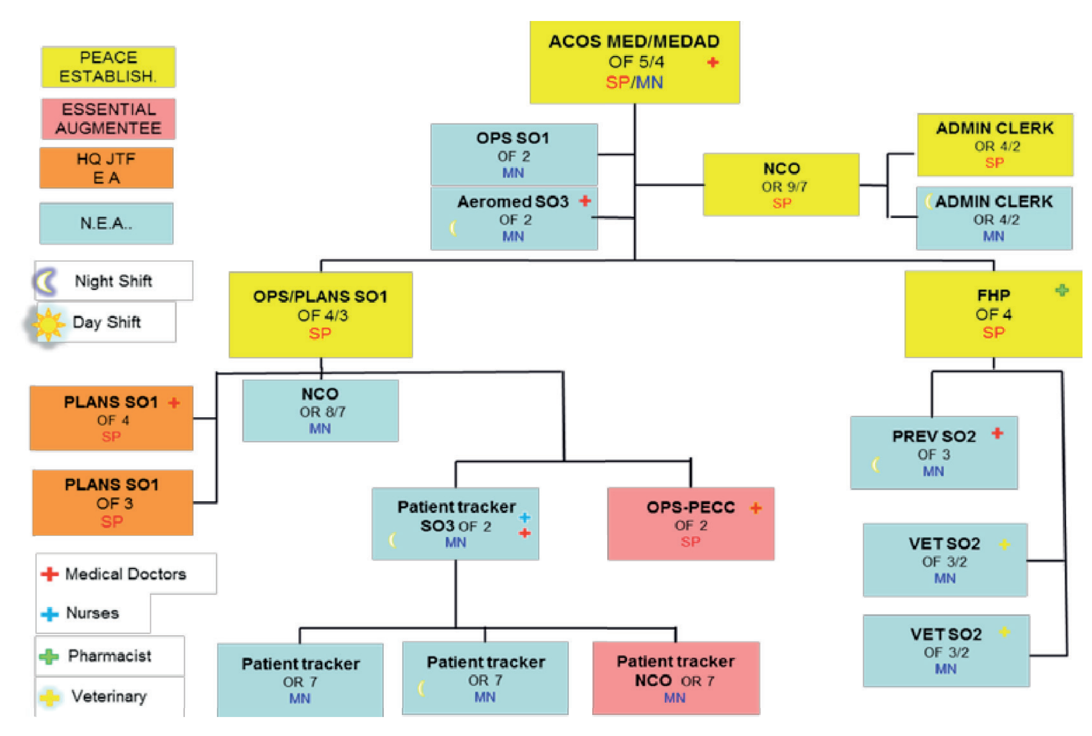
- MED OPS/PLANS Cell is responsible for participating in the OPP from the earliest stage to prepare briefings and reports as required or needed; identify Branch requirements, concerning policies and procedures, development and updating of SOIs and POIs; integrate the PECC (they are the G-MED representatives in the OPSCEN).

- Medical Intelligence and Force Health Protection (MEDINTEL/FHP) Cell also contributes to the HQ planning process (mainly circumstances concerning environment) providing a comprehensive Force Health Protection, preventive medicine and MEDINTEL threat assessment. It will deploy one element in the JOA/AOO, as soon as possible, with the Forward Liaison and Reconnaissance Team.

Collaborate in the medical preparation of HQ personnel in deployable positions, ensuring that they pass the necessary medical, dental and mental checks, to be certified as fit to deploy in accordance with their national standards and related to NATO requirements; checking that they have completed the established inoculation program (AD 080-96 NATO and national standards) plus additional medical preparations of the whole Deployable Forces mission spectrum.

NRDC-ESP HQ MEDICAL BRANCH MAIN TASKS.

The aim of Corps/LCC/JTF NRDC-ESP HQ G-MED Concept is to describe the Medical responsibility, principles and policies of Medical Support, medical organization, MED R2, MED C2 and relationships for NRDC/ESP in NATO led operations, addressed to all subordinate Units integrated within the NRDC-ESP, deploying within the Corps/LCC assigned AOR, or within the specific JOA.



NRDC-ESP HQ GMED structure. Peace and Crisis manning, the last one including essential and non essential "augmentees".

The main purpose is to ensure an appropriate and visible MED SPT to the assigned forces, and for the assigned mission to the NRDC/ESP Command (including prevention of diseases, rapid treatment of injured, wounded or sick, MEDEVAC and eventual recovery and return to duty). The intended outcome is to minimize morbidity and mortality among own forces and others whose healthcare is provided in operations. Sustain a culture of multinational co-operation and trust plus a commitment to continued development in Healthcare excellence among the community of Military Medical Services of NATO, TCN and partners nations, including HNs. If assigned to a mission task, to contribute to improved health outcomes where NATO operations are conducted.

Although the risk remains the onus of Nations TOA (responsibility for their deployed Units MED SPT and the legal duty of care of their military), NATO Commander will ensure the coordination of the full spectrum of MED SPT with each JTF/CC/Corps Commander having the collective responsibility for the assigned subordinate Units.

General Tasks:

Contribution to IPB and CPOE.
Medical Intelligence (MEDINTEL).
Medical Planning as part of the OP WG during the OPP.
To design the MED Structure, to define the needs to be covered and the means and assets required in the operation, always tailored to the mission.
To collaborate to the OPLAN and OPORD, elaboration of OP MED Concept and Annex QQ (Medical). They include all possible warnings, also those of CBRN origin and precedence which must include the medical side of the MASCAL Plan. This one includes the CBRN MASCAL Plan.
To coordinate and to ensure the MED readiness and IMT of the HQ personnel.
Force Health Protection (FHP) and preventive Medicine issues, including general and medical waste matter management.
To ensure a continued and reliable Medical Logistics.
MEDEVAC: Assets, movements, routes coordination, de-conflict and their control up to the STRATEVAC level, then coordinating it with JLSG HQ MED.
MTFs: Level Role 1 (remaining a national responsibility, with their coordination within the common MED Structure as G-MED responsibility), Role 2 and Role 3 MTFs, their parents MED Units, deployment, readiness and capabilities. In Tactical level G-MED would have direct control of Corps Medical Units assets (R 3 and/or R 2E MTFs, CSU. Air MEDEVAC,).
Patient Tracker and regulating.

MEDDIR MEDAD responsibilities:

Leads the MED C2, responsible to authority for all MED matters on behalf of the COM.

Coordinates the MED SPT by and to the deployed forces, especially in a MASCAL Situation.

Identifies MED shortfalls and health risk within the AOR.

Establishes a potent Patient Evacuation Coordination Center (PECC).

As JTF and LCC MEDDIR/ACOS G-MED (and also at Corps level if assigned in LCC OPLAN) liaises with IOs and NGOs MED authorities, IOT advise COM on their activities and coordinate both military and IOS/N-GOs MED SPT in the AOO/JOA. As JTF and LCC MEDDIR/ACOS G-MED (and also at Corps level if assigned in LCC OPLAN) coordinates Host Nation (HN) MED SPT capabilities in the AOR/JOA to be included into the chain of NATO MED SPT when in compliance with NATO health care standards.

To elaborate technical assessments to the COM when required and always for any situation and matter that MEDAD considers that the COM has to be informed. To be in the SAG when required and any other medical and technical task decided by COM.

CURRENT G-MED ACTIVITIES

G-MED has participated in the Spanish Exercises and tasks assigned to the NRDC-ESP HQ. During the second half of 2017, the Branch was in different WGs, participating in “Trident Javelin 17” (full OPP MEL-MIL and Lessons Learned Process) and in JWC (Stavanger, Norway).

In the first semester of 2018, Branch main effort was dedicated to Internal CREVAL and Valiant Lynx 18, deploying in Chinchilla Training Field (May).

The full program was followed by the G-MED, included training of “augmented” personnel to be integrated in the PECC and TOPFAS training.

NSO Courses were attended (“NATO Medical Intelligence”, “NATO Medical Surveillance” and “Improving Operational Effectiveness by Integrating Gender Perspective”). Coordinated with Red Cross. ESAD Users’ Capacitation and CPR Courses were organized for HQ personnel, aimed at having a trained medic present at all times in any CP and HQ post. Close coordination in keeping with Medical Chain of Command at Tactical level (LCC MEDAD) and with the higher Operational level Medical Command (SHAPE), participating in the Medical Advisors and Planners Forum 2018 (in Szczecin).

Some real-life medical emergency situations have been handled during HQ activities.

Medical, Psychological and Dental tests, to ensure the fitness and readiness for deployment of all HQ Spanish personnel, were organized (they were performed by the Medical Services of Bétera Military Base and those of the HQ SPT BN). Assessment and reports in collaboration with IMT program and training activities. Lesson Learned Mobil Course has been attended and it is expected that the next TOPFAS (new version) will be accomplished. CPR reminded conferences will be given to all HQ personnel (Counter IED IMT).

Nowadays G-MED participate in different working groups, although the main dedication is to prepare the transition to JTF HQ. To this purpose G-MED is working in close cooperation with G-3, G-5, G-4, G-1, and RSC (concerning JLSG/JTF MED coordination in Joint Ops).

G-MED’s progression is going to be updated along the line followed by counterparts in other SHAPE HQs. This means opening a new Cell dedicated to MEDICAL LOGISTIC, stabilizing a specific and smooth coordination with the equivalents in other HQs and having the same tools (as LOGFAS). The near future faces the new challenge of transition to Joint Level, including internal Documents updates, evaluate changes and preparing for training Valiant Jackal 19 and Trident Jackal 19 evaluating exercise.

TACKLING THE CHALLENGES OF MODERN NATO CIS

Colonel José Salvador Cubedo (ESP-A)
ACOS G6 CIS

Complexity is all around us. Modern combat requires quick reaction time and that means quick decision-making processes. To carry out sound decisions, you should have correct information. The more information you have, the more you understand the battlefield and, thereafter, the better decisions you take. But information is all about the battlefield; having it is not enough. Commanders require modern business-like decision support tools to avoid being distracted by the enormous set of data that is produced by modern weapons and intelligence systems. The dilemma is obvious: the commander cannot



afford other than the essentials to take right decisions. However, he receives overwhelming information and his staff are barely capable to achieve the clarity he demands to take decisions.

Modern Communications and Information Systems (CIS) came to the rescue. NRDC-ESP HQ has understood, from the very beginning, the importance of offering to the commander and his staff the tools they require to structure and simplify information. Talking in business like language: Command and control (C2) is the process to gather and analyze information in order to take decisions that will create the added value over the enemy competitor. NATO CIS has understood this process and has created a set of computer-based tools to facilitate the business of winning campaigns and defeating the enemy. Different C2 procedures are supported by sophisticated software that tries to organize information in order to present the commander with the right set of options. And CIS is the key element to provide such critical tools. Challenges are enormous, as NATO CIS tries to cover the full spectrum of C2 requirements. The NATO CIS catalog of software in support of C2 is long, very long. NRDC-ESP HQ G6`s main task is to be able to first understand those NATO software requirements, obtain the means to execute it, and finally, install, configure and maintain it for the staff users to be able to profit of its functionalities. To do so NRDC-ESP HQ G6 is organized in a team that is able both to frame the operational environment of the software, assess the logistical and budgetary consequences, test it to know details on implementation, and finally, transfer it to the signal unit that will ultimately be in charge to field it on the deployed CIS infrastructure. Even if it may seem surprising for an external observer, the first challenge is not technical, not even operational: the first challenge is obtaining clear requirements from the final users that will use the provided software. The adaptation of the staff to the new C2 tools requires a series of iterations in which the functionalities, that the new software provides, have to be leveraged with the current C2 procedure in order to understand the required changes the staff may have to make in order to increase efficiency by using the tool that is provided to them. Once the operational understanding of the new tools has been achieved, then the G6 operations, working with the G6 technicians, and in coordination with G6 logisticians, start the process to analyze the implementation consequences of the software.

The first step is acquisition. Final acquisition of the required software is a complex process. Life cycles of technological items are very short, and public administration contracting processes are very long. Both cycles have to be aligned appropriately. The majority of the NATO software is free, but NATO software requires to run the installation of underlying Commercial Self (COTS) software.



Modern military CIS equipment requires personnel with a high level of expertise and knowledge. Signal Corps officers, NCOs and soldiers with the required capabilities are a precious and scarce resource. In the civilian world, the systems we are used to manage would be operated by engineers with a degree in computing. Here, in the military, we have NCOs or soldiers that have to be trained to do the same. Required technical specialization is so high that this training has to be clearly focused on the right purpose and on the right person as not everyone is able to assimilate this complex knowledge. Spanish Signals Command has decided to establish certified civilian training processes creating specialized technical academies in the respective garri-sons. We're talking about CISCO or Microsoft certified academies that are run by military teachers and been endorsed and approved by these companies as official training centers. Some other Nations, and NATO itself, are relying on civilian contractor support for such technical works. In a static, non-deployable military environment this could be a sound solution. However, contract-ing civilians is a process subject to the restrictions of contracting regulations. Also note that, being more and more dependable on contractors, makes units and HQs technically vulnerable when situations get critical and systems have to be deployed in conventional risky warfare operations. Then, soldiers will be the only available human resources trained to tackle both technical and operational challenges.

When talking about NATO exercises, National systems have to inter-connect with NATO CIS infrastructure. This connection involves a complex process of requesting configuration parameters, using the service management process that NATO CIS Agency has established. Since each exercise is carried out in different operational and technical contexts, NCIA was given different technical parameters. In those circumstances, CIS nodes have to be configured every time with different parameters. CIS nodes are hardware modules, made up of servers, network equipment and storage devices that have been designed to host the software applications required to support Command and Control (C2) procedures. Normally, a CIS node is deployed to support users at each Command Post (CP) belonging to an HQ C2 structure. Since NATO requirements provide for using scores of different services, the majority of the CIS military community has adopted the virtualization technology in order to optimize the CIS node hardware and make it able to host many different types of required software. All of these increasingly complex technical layers have to be strengthened and embedded in order to comply with the strict security regulations required to handle secret classified information. The problem is that, after a lot of time spent configuring the nodes for a specific scenario to support a specific exercise, it is necessary to rebuild them again from scratch to be used in another one. Core technical parameters have changed and cannot be reused, and security regulations push you to clean the information that was used in each exercise. This information purging is very difficult to execute without affecting the software of the node. Time, cumulative experience, and effort are depleted every time and work has to start again.



Federated Mission Network (FMN) framework appears to become the way to help the multinational CIS solve the interoperability difficulties it was facing so far. FMN framework intends to create a set of standards and regulations oriented to allow CIS from different Nations to be able to exchange information with each other. If Nations have the autonomy to establish a National CIS bubble, using permanent, designated and agreed technical parameters, then, once a Nation configures an FMN CIS node, this node won´t have to change every time it has to participate in a new exercise. As other FMN Nations will do the same, multinational exercises will be simpler since the required configuration changes will be minimized. NRDC-ESP HQ is using this idea to create the concept of Reference Node. NRDC-ESP HQ G6 Branch has designed a system to keep all the CIS nodes permanently configured, updated, patched and licensed. The idea is to profit again from the virtualization technology to create a kind of super CIS node able to host inside different virtual software nodes. The physical actual CIS nodes will be reset and stored in the barracks, waiting to be used in an exercise or operation. Whenever they have to join a new exercise or operation, virtual software nodes, that were permanently hosted in the reference CIS super node, will be transferred to the selected physical nodes for the exercise. Furthermore, the continuity of the system won´t be broken and the reference super node will always be connected to the deployed nodes that participate in the exercise or operation. The idea is similar to the one already being used by NATO when establishing its Mission Secret network. A reference node is kept with the support of a selected set of expert administrators that are able to manage the network remotely. Thereafter, when deploying for an operation, the Signal Unit will first load the physical nodes with the virtual ones taken from the super Reference node. Those virtual nodes will be clean, patched and ready to pass the mandatory security accreditation process. Once each physical node has been loaded with the associated virtual one from the Reference Node, they can be then transported to the deployment location. There, the communications systems are established, enabling them to interconnect and also connect to the rear back reference node, where the very expert administrators are monitoring and are ready to support final configuration of the system. If something seems wrong and the deployed unit is not able to solve the problem, the key administrators, working in the rear, can support them remotely, since the system relies on the rear reference node. With this solution the main problems can be solved: the system is always ready to be accredited to manage classified information since it has a permanent clean, and hardened configuration that is constantly updated and patched. Since the nodes are originally clean and ready, the long time previously required to prepare them to be deployed is shortened. Instead of using weeks to raise up the nodes from scratch, virtual nodes can be moved from the mother reference node to the physical ones in a matter of hours.



FMN counts on an additional initiative that has great potential to simplify CIS: Mission Threads. This concept establishes a normalized, procedural way of carrying out operational tasks. It establishes a flow work depicting all the phases of the process and the involvement of the related stakeholders. Nowadays, the mission thread processes are still bound to specific NATO Functional Area Service (FAS) software. The execution of these mission thread processes requires the use of specific NATO software to support the development of the different steps required. However, if mission threads were expressed in terms of plain information exchange requirements, specific software would not be needed and Nations would be able to employ their own software as much as it accomplishes the required information exchange to fulfill the process.

Information systems run in an environment subject to continuous cyber threats. When CIS is prepared to be used in support of a task organization that is intended to handle classified information, it has to be configured according to very strict technical security rules. NATO and National Security Agencies establish the parameters to make the network ready to protect the confidentiality, availability and integrity of the information. The initial security settings that have been implemented to get the system accredited, have to be maintained in time, since the system evolves, stores different information and may be subject to important changes due to operational reasons. NRDC-ESP HQ is tackling security in a dynamic military environment by creating a permanent cyber auditing system that is not just controlling that the rules you have to implement are up and running, but also, detecting incidents that may be caused by cyber-attacks. NRDC-ESP HQ has established a central Security Operations Center that is able to remotely control cyber defense modules. These modules are deployed by the Signal Unit in any segment of the network supporting the different CPs of the NRDC-ESP C2 structure. They monitor the respective system segment and report the SOC whenever they detect any abnormal situation in the network. The system has also supervision and auditing capabilities regarding the security rules implementation. Once the system has been appropriately strengthened according to the security rules, the most continual activity consists in controlling that all the different pieces of the network puzzle are correctly updated and patched. The reality of modern software and hardware is that its evolution is constant. Manufacturers are adding new capabilities or facing software vulnerabilities in near real time. In military systems, isolated from the Internet, patching and updating activities have to be carried out using complex security policies that have to be carefully prepared and tested in order not to hamper the overall security configuration of the system.

NRDC-ESP HQ G6 realizes the challenges modern NATO CIS imply. With the support of the National ESP Signal Command, and with the open and flexible mentality of its members, it will succeed in providing the right CIS support to HQ in current and future operational environments.



The AOCC in Valiant Lynx 2018

Lieutenant Colonel José Antonio Rodenas Pua (ESP-A)
AOCC SBAD

"Air Land Integration (ALI) is the focused orchestration and application of the full range of Air and Land capabilities within a Joint Force to enhance effects. ALI considers all elements in a given battlespace regardless of the Component to with they belong, operating together to achieve a common aim."

- JAPCC 2011 -

INTRODUCTION

Technically, the Joint Force Air Command (JFAC) can deliver Air Power in terms of roles, missions and sorties. To achieve multi-level objectives, from strategic to tactical level, the Air Power concentrates its missions in the following operational roles: Counter-Air, Attack[1], Air Mobility, contribution to JISR and support to JPR.

The JFAC uses air-attack capabilities to target adversaries through strategic attack, counter-surface force operations[2] and information activities.

Air Power Contribution to Counter-Land Operations (APCLO) are conducted to divert, disrupt, delay, degrade or destroy an adversary's military potential before it can be brought to bear effectively. These kinds of operations fall under two mission types: Air Interdiction (AI) and Close Air Support (CAS).

AI and CAS are air attack missions that are usually operating in the Corps Area of Operations (AOO) and can support, directly or indirectly, the Corps maneuver but, undoubtedly, these JFAC missions have to be coordinated, de-conflicted and integrated in the Corps scheme of maneuver in order to optimize the joint effects. This is where the Air Operations Coordination Centre (AOCC) can demonstrate its value.

AOCC in Valiant Lynx 2018

Exercise Valiant Lynx 2018 provided several unique operations and training opportunities for the AOCC within the NRDC ESP HQ. Most notable were the creation, development, and testing of the Joint Fires and Airspace Management (JFASM) Cell within the OPSCEN, in concert with both G3AIR and Fires & Targeting branches. Additionally, the AOCC coordinated with, and was enhanced by the Spanish Air Combat Command (MACOM), Multi-National Corps Northeast (MNC-NE), HQ Allied Rapid Reaction Corps-UK (HQ ARRC), and the NATO Deployable Air Command and Control Center (DACCC) from Poggio Renatico, Italy, in order to fill the AOCC critical deployed postings. The JFASM Cell concept arose out of an identified shortfall in how air issues are addressed at the tactical level within the OPSCEN structure. During Exercise Trident Juncture 2015, a lack of coherent tactics, techniques and procedures (TTPs) such as the effective management of immediate close air support actions, airspace clearance, management, fires clearance and coordination were identified. In addition to this, and in partnership with the G3AIR and Fires & Targeting directorates of NRDC ESP HQ, the AOCC assisted the JFASMC development, modeled after a United States Corps Joint Air Ground Integration Cell (JAGIC), to streamline air actions within the OPSCEN, more rapidly coordinate joint fires, and provide quicker joint fires responses to fielded forces under the control of HQ. Exercise Valiant Lynx 2018 was the first fielding of the JFASM Cell concept and provided all parties with valuable insight on improvements and TTPs needed for future success.

The AOCCs coordination with, and use of, multi-source personnel augmentation broke down a critical barrier to cross-AOCC/DACCC learning and information sharing. In past exercises, the HQ NRDC ESP AOCC relied primarily on an enhancement of the Spanish Air Force. With the addition of personnel from MACOM, MNC-NE, HQ ARRC, and the DACCC, the AOCC it was possible to gain excellent third-party insight into its operations and procedures. Additionally, our enhanced capacity could both provide and receive training in various air disciplines related to supporting land operations.

Traditionally the AOCC was physically located in a couple of tents within the Operations Compound in the Main Command Post, close to the OPSCEN, G3Air and Fires & TGT branches. While one tent was dedicated to lodge the AOCC Command Section, AOCC Plans and Admin, the other tent included the AOCC current operations functions, CAS and AI execution, airspace management, defensive operations, Surface Based Air Defense and INTEL.

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1 ATTACK lies at the heart of air power's capacity to create influence by changing behaviors or the course of events.

2 Counter-surface force operations comprise counter-land and counter-maritime operations (APCLO and APCMO).

Valiant Lynx 18 was also the first time the AOCC changed its internal structure, splitting their personnel into two parts in order to support the JFASM Cell, moving the AOCC Current Air Operations Section to the Corps OPSCEN. This new distribution allowed to optimize the AOCC effectiveness and improved substantially the Air Land Integration along the ATO[3] execution period. Conversely, this new AOCC structure caused some internal discrepancies and communication problems between both AOCC halves to be solved in future occasions.

This AOCC Current Air Operations Section, composed by five people, was located in the OPSCEN, while remaining functionally subordinated to the AOCC Chief, supporting the JFASM Cell in airspace and fires clearance and CAS assets employment.

This new structure and concept, although in the early stage, is very close to the US JAGIC[4]. This entity, physically located in the Corps OPSCEN, is an efficient approach to effectively organize people and equipment, in a round table that permits quick reaction and response to call for fires, air support and airspace synchronization. The JFASMC provides the Corps a powerful joint team capable of collaborative fires while maximizing the use of airspace.

The AOCC personnel collocated in the JFASMC tried to replicate US/UK ASOC functionalities: SAD (Senior Air Director), ATOM (Air Tasking Order Manager), ASM (Airspace manager), INTO (Intel Officer) and JARNO (Joint Air Request Net Operator). The JARNO function was to operate the JARN (Joint Air Request Net) which is a dedicated network used by AOCCs, ALOs (Air Liaison Officer) and JTACs (Joint Terminal Attack Controller) for immediate requests. Figure 1 shows the tactical deployment:

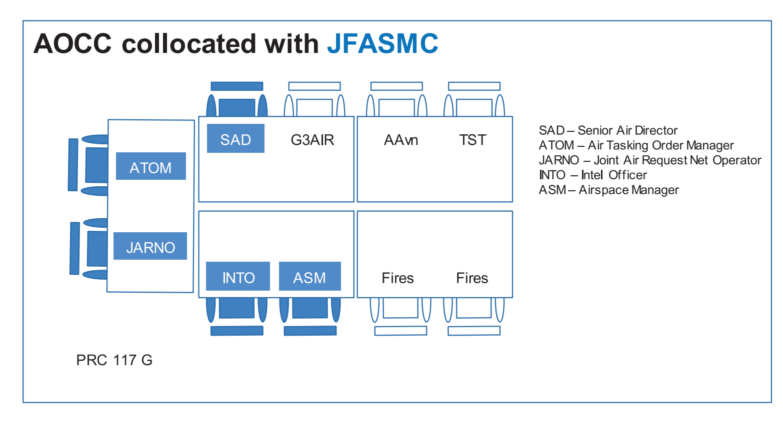


Figure 1.Tactical deployment of the JFASMC.

During Valiant Lynx18 LIVEX, this JARN was set up by three PRC117G working in a single TACSAT[5] frequency net. The AOCC had one of these radios close to the JFASMC and was operated by the AOCC JARNO. There were also an Air Liaison Officer ALO[6] located in the Brigade with a second radio, and finally the JTAC[7] managed the third one. This JARN was used by JTACs to transmit vocally immediate requests to the AOCC and rapidly and efficiently responded for joint fires by coordinating with the necessary air and ground units through the JFASMC.

This important scheme of communications is shown in Figure 2.

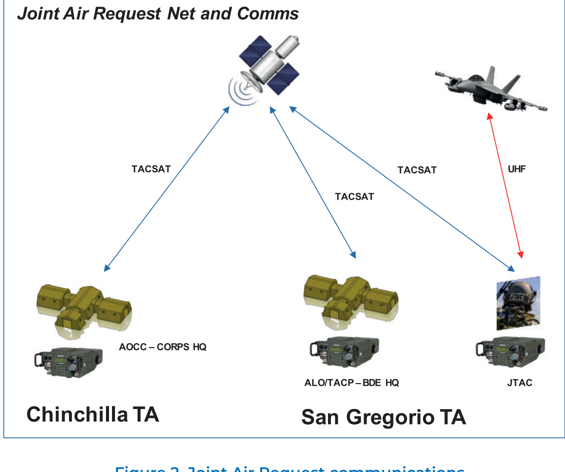


Figure 2. Joint Air Request communications

This "experiment" gave the AOCC a good number of LI/LL[8] and allowed to evaluate certain deficiencies previously detected, showing up that there is enough room for improvement. Some interesting points to highlight are:

- There are many discrepancies between US/UK and NATO doctrine regarding TAC Air C2 structures and responsibilities. AD 80-65 allocates the TAC Air C2 role to the AOCCs, but it is currently unable to fulfill this task without appropriate manning, training, qualification, and equipment.

- In relation to delegation of authority, in NATO doctrine, tasking, re-tasting and re-role authority are retained at JFAC level, while US and UK doctrine contemplates this delegation at a higher tactical level, usually Corps or Division level.

CONCLUSION

With these considerations in mind, Valiant Lynx 18 was a good opportunity to evaluate the JFASM Cell concept as a multidisciplinary, modular and scalable Corps structure, capable of collaborative fire while maximizing the use of airspace, joining personnel from different services, background and expertise. The AOCC have changed its traditional structure and adopted the JFASM cell with close air support, air interdiction, airspace management an intelligence air expertise in order to find an optimal response to joint requests. However, some shortfalls, already identified, were restated during Valiant Lynx 18. Nowadays, the AOCC cannot carry out the ASOC role due to lack of personnel, training, equipment and doctrine.

3 ATO: Air Tasking Order. Periodically published documents that contain detailed tasking for all preplanned air missions scheduled for operating within the Joint Operations Area, during a specific timeframe.
4 JAGIC: Joint Air Ground Integration Cell.
5 TACSAT is the most efficient way to transmit secure voice or secure data on the radio.
6 ALO: Air Liaison Officer located with each Division and Brigade.
7 JTAC: Joint Terminal Air Controller.
8 LI/LL Lessons identified/lessons learned

Information Operations InfoOps

Info Ops within the NATO StratCom Policy context

Lieutenant Colonel Miguel López Rodríguez (ESP-A)
Former ACOS INFO Activity

Background. The need for integration.

To combine and put together different capabilities and actions during military operations has been the main concern of commanders since the first steps in military art development were taken.

Coordination of actions, avoidance of interferences formed the first stage after the chaos of indiscriminate use of the variety of assets and/or units. Soon after the need of synchronization rose, not only to coordinate but to use the available means in the appropriate moment even simultaneously to multiply the effects. Now, it's time for integration, sequencing actions to create one effect, selecting the appropriate pace and creating the synergy of own actions in concordance with the assessment of previous stages. Information activities (IA)[1] in the Information environment (IE)[2] cannot be missing from the holistic integration of activities and effects required in every military organization.

StratCom. The state of mind.

NATO StratCom[3] is defined as "the integration of communication capabilities and information staff function with other military activities, in order to understand and shape the Information Environment (IE), in support of NATO aims and objectives" which after the review of 2017 has been moved from a purely advisory/coordination function to that of holding the Commander's delegated authority and ensuring it is fully integrated with other activities, current StratCom policy groups together, under a single Chief/Director, all the communication capabilities (StratCom, Mil Public Affairs (PA), and PSYOPS) and the information staff function (InfoOps). StratCom is about creating effects in the IE, but Military forces operate in all four physical environments (air, space, maritime and land) plus the four non-physical environments (information, electromagnetic spectrum, cyberspace and time) and the Information Environment is pervasive and applicable to all physical environments.

The intent, direction and guidance of the commander, and the purpose and objectives of the upper echelon give form to the Narrative and the StratCom framework that, once elaborated for a specific operation, must permeate all staff processes from the very beginning of the Planning process.

Within this approach, messages and deeds will be fully coherent to achieve the desired end state, being fully conscious that every activity of the force exerts an influence and every action communicates either in a positive manner by closing the say-do gap, or negatively through contradicting our own communication and information activities.

Info Ops. The Watchdog.

Integration and synergy are what InfoOps[4] is about, even more under the light of the StratCom policy implementation.

Military forces use their range of capabilities (such as manoeuvre, civil military operations, fires, psychological operations...) to create effects in the physical and non-physical environments that will ultimately affect behaviour of audiences in a desired manner and support the commander's objectives. Combat function Information activities[5] comprise actions that have either physical or psychological impact on the character and behaviour of a person or group as a first order effect by providing information to help influence perceptions and understanding.

InfoOps staff must ensure that all the IA are fully integrated and in accordance with the StratCom framework and narrative as well as with the combat functions manoeuvre and fires. Independently or together, well planned physical and psychological actions will have a significant effect on the enemy's collective morale by undermining confidence in capabilities, leadership and their cause.

In addition, as some tactical activities may well have undesired secondary effects in the psychological dimension, InfoOps looks to limit negative effects only to the imperative ones.

InfoOps branch is the eyes and the voice of the StratCom Chief/Director, when fully integrated in all stages of the planning, targeting and execution of operations and tactical activities. To succeed, InfoOps branch must maintain direct dependence of StratCom Chief/ Director while functional ties may be created with the plans or operations divisions.

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1 **Information Activities (IA):** Actions designed to affect Information Environment (IE) and/or information systems. They can be performed by any actor and include protection measures. (MC 422/6 NATO Military Policy for Information Operations, WD 11SEP2018). Communication and **Information systems:** an assembly of equipment, methods and procedures, and if necessary personnel, organized to accomplish information transfer functions. (AAP-06 2017 Ed.)

2 **Information Environment (IE):** An environment comprised of the information itself; the individuals, organizations and systems that receive, process and convey the information; and the cognitive, virtual and physical space in which this occurs. (AJP 3.10 Edition A Version 1, DEC2015)

3 NATO Military Policy on Strategic Communications (STRATCOM) (MC 0628, 14AUG2017)

4 Information Operations (Info OPS): Staff function a staff function to analyze, plan, assess and integrate information activities to create desired effects on the will, understanding and capability of adversaries, potential adversaries and NAC approved audiences in support of Alliance mission objectives. NAC approved audiences are those identified in top-level political guidance on Alliance information activities. These may include adversaries, potential adversaries, decision-makers, cultural groups, elements of the international community and others who may be engaged by Alliance information activities. (AJP 3.10 Edition A Version 1, DEC2015)

5 Combat functions consist of: command; intelligence; fires, manoeuvre, protection, information activities and sustainment. (ATP 3.2.1. Allied Land Tactics Ed.B v1 RD1 JUN2018)

Information Environment Assessment. Untying the Gordian Knot.

Assessment of the IE (IEA) is an unavoidable requirement for the planning and conduction of operations. Critical information requirements related to IE components must be known for a successful planning process and require continuous monitorization during the execution.

The IE comprises physical and non-physical domains like the individuals, organizations and systems that receive, process and convey the information; the information itself and the cognitive, virtual and physical space in which this occurs; as a consequence the task of the IE Assessment is a complex multidisciplinary effort that must be maintained in peace, crisis or operations involving, at least, intelligence, InfoOps, Psyops, Cyber and CMI staff with the support of Legad, Polad, Culad and other SMEs as required.

This big effort will ensure the understanding of the IE as part of the battlespace that allows the commander a successful definition of objectives, required effects and related actions to support the planning process. Additionally, the definition of the Measures of Effectiveness (MoE) applicable to the designed actions will allow the evaluation of the progress and the validation of own operations and the pace of the achievements.

A successful IEA team/working group is a staff-wide process to develop comprehensive understanding of the Information Domain (I in the PMESII domain model). Relevant military sources and non-military information acquired, integrated and analysed across all pertinent inter-related systems are to be merged in a knowledge compendium.

Intelligence will carry out most of the collection and initial analysis with the support of IE analysis software which will be combined with information from other parts of the staff and external sources in the development and maintenance of comprehensive understanding. InfoOps staff with the support of the required SMEs will have the responsibility of the final assessment based on the aforementioned knowledge compendium/database.

For the continuous IEA the quality of a detailed Collection Plan is paramount since the progress measuring and the adjustment of the Information Activities fully depend on the accurate assessment of relevant Measures of Performance.

NRDC-ESP approach. The Information Activities Branch.

In the context of the STRATCOM MC0268, NRDC-ESP has adopted a new structure, organizing a Communications Directorate (COMDIR) to coordinate and synchronize all the communication activities to contribute to the achievement of NRDC-ESP objectives.

COMDIR implements the communication strategy in NRDC-ESP, and provides and promulgates NRDC-ESP communication and information policies and guidance. COMDIR is organized on a vertical structure, with COMDIR Chief at the top, supported by COMDIR front office, and two subordinated branches that provide functional area expertise, retaining their functional responsibilities, Public Affairs Office (PAO)[6] and Information Activities (IA).

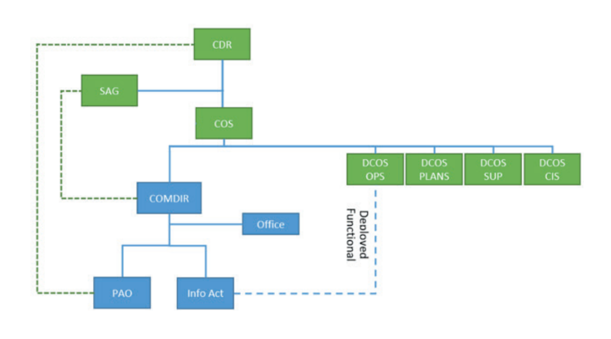


Fig.1 COMDIR in the NRDC-ESP-HQ

As it is stated in the current MC0628 policy, COMDIR Chief maintains the StratCom Advisory role and Chief PAO keeps the direct contact with the Commander.

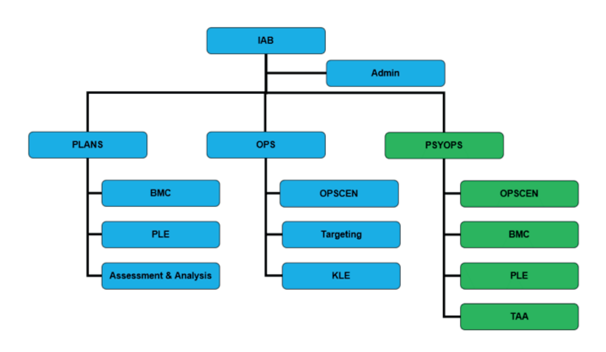


Fig.2 IAB in the COMDIR

InfoOps staff function is carried out by the Information Activities Branch directly subordinated to the COMDIR Chief to ensure Information Activities (IA) are fully incorporated in plans and operations while properly coordinated among different branches.

IAB analyses, plans, assesses and integrates IA to create desired effects on the will, understanding and capability of approved audiences in support of NRDC-ESP COM objectives (InfoOps) and plans and coordinates the required IA to address the approved audiences in order to influence perceptions, attitudes and behavior, affecting the achievement of political and military objectives (PSYOPS). Additionally will ensure that COM NRDC-ESP STRATCOM D&G is implemented in all IA.

IAB is permanently subordinated to COMDIR Chief but additionally, in operations and exercises, it maintains a functional dependency to DCOS OPS. According to NATO MC0628, both, PSYOPS and INFOOPS retain their functional responsibilities

InfoOps functions are guaranteed by the Plans and OPS section, while the Psyops expertise maintains one specific section.

All InfoOps requirements are covered including mid-term and long-term planning (PLE and BMC), IE Assessment activities (InfoOps & PSYOPS), current OPS coordination (OPSCEN) as well as KLE and Targeting support.

Psyops Section provide mid-term and long-term planning, Current Ops support and Target Audience Analysis (TAA) capability.

6 As PAO structure and responsibilities is maintained unchanged, its credibility cannot be compromised. PAO is not involved in the activities Planned and coordinated inside IA Branch.

Being the Political Advisor to the NRDC ESP Commander



Mr. Antonio Cortiñas-Guntin (CIV)
Former Political Advisor at the HQ NRDC-ESP

What an exciting journey it has been to be the Political Advisor (POLAD) to the Commander of the NRDC-ESP HQ in the past years!

Please, follow me. Imagine being responsible for providing political advice to the Commander, when he is ordered to conduct the first ever VJTF real life deployment of the NATO Response Force (NRF) –both the Corps HQ and the forces- into Poland in May 2016. Just two weeks ahead of the 2016 NATO Warsaw Summit, while four big military exercises –NATO and non-NATO- were taking place there. Imagine being the designated VJTF-Corps HQ for the whole 2016 and hand over the responsibility for 2017 to the ARRC HQ.

Besides the NATO Summit in 2016, remember the almost non-existent Summit of 2017 in Brussels, as well as the last one in 2018, again in Brussels, just a few days ago. Imagine being able to decipher the political guidance coming from our political masters in a Summit. The work of deciphering the 139 paragraphs of the Warsaw Summit Communiqué and the 79 paragraphs of the 2018 Brussels Summit Declaration. Add to this, the deciphering of the political guidance from the same political masters when speaking in a different forum, be it the European Union (EU) or when speaking nationally.

Imagine the impact of the decisions taken by our political masters when in Warsaw. Imagine then, during 2017 and 2018, the multiple meetings led by LandCom HQ on how to better employ all the NATO Force Structure (NFS) Land HQs available to NATO. On how to re-think Article 5 operations and exercises. On how to use the NFS HQs for Art. 5 purposes. Finding out its implications. Imagine the busy calendar of exercises during 2017 and 2018.

Add to this, being called to participate in other contexts like the European Union military exercises, being part of an Operation HQ (OHQ) for strategic planning purposes (MILEX 17 and MILEX 18). Likewise, being part of the attempt to deploy and run a joint-combined Special Operations Component Command as part of the NRF (SOCC18). These type of HQs, and particularly their Commanders, need the advice of a POLAD, among other inputs.

You may be well aware that the NFS, headquarters are national but offered to NATO. Besides their national role, they can also be offered to the EU, if nations so decide. Usually at the Corps level of command, these land HQs may have some joint capacity. They are placed right there, in between the tactical and the operational level of military command.

You won´t be surprised to note that commanders at such level of command need many different inputs to exercise their command. Not just those exclusively devoted to the military side of commanding subordinate units. The political guidance emanating from NATO and from our political masters is critical. The Commander has to know that his decisions and guidance are within the accepted policies. That is exactly where POLADs fit in: making sure his/her Commanders know well the political boundaries, the applicable policy in each moment and place.

Theoretically, the work of a POLAD is quite simple: make sure that the Commander is aware of the current appropriate policy. That is, the POLAD (him/her) has to be well acquainted with which policy is the proper one, and this is where we enter difficult terrain. A great deal of the POLAD´s work can be done alone, using a computer and a telephone to search and query open sources, working in a similar way to those mining for data. Two extra "small" problems arise: 1) it implies to know what/where/how to look for it. 2) It implies you have to do it every day. Real life events, decisions, communiqués, relevant meetings, etc., happen weekly, daily.

Imagine for instance, the changes in the EU guidance when it comes to dealing with issues related to the EU approved Permanent Structured Cooperation on Security (PESCO). Furthermore, imagine what some of the EU states did, deciding last month to create the European Intervention Initiative (EII), for military purposes in Africa. Do these issues affect my Commander or my HQ, as of today? Not really. Could they affect us? Yes, they could. Should a POLAD keep an eye on their development? Definitely.

Looking ahead, the NFS HQs -therefore our NRDC ESP HQ as well- will be affected by the decision taken last 12May2018 at the Brussels Summit Declaration relating to the establishment of two multi-Corps capable Land Component Commands as soon as possible . The calendar and implementation plan for this decision have been agreed upon: in Sept2018 the decision will be taken, and at the NATO Defence Ministerial meeting in Oct2018 it will be sanctioned. It will have quite important implications for the NFS HQs affected.

Let me finish my lines and try to wrap it up. Imagine when any of the above-mentioned issues may, can, or just directly will affect your Commander and your HQ. Don't you really think it is a privilege, intellectually, to be in the position to provide political advice to your Commander on any issue he and his HQ might be involved in? I certainly think so.

1 During the 2014 Wales NATO Summit, NATO leaders agreed to establish a Very High Readiness Joint Task Force (VJTF). The VJTF is a high-readiness "Spearhead Force" able to deploy with a short notice-to-move to against threat to NATO sovereignty. It consists of a land Brigade numbering around 5,000 troops, supported by air, sea and Special Forces. Two more land brigades may support the VJTF as a "rapid reinforcement capability" in case of a major crisis. In 2016, both the Brigade "spearhead force" HQ with its troops and the Corps HQ were deployed for the first time, to Poland.

2 Paragraph no. 29 of the 2018 Brussels Summit Declaration.

A bit of history:
ANCIENT ROYAL MONASTERY of Santo Domingo, site for the High Readiness Land Headquarters CGTAD and for Commander of NRDC-ESP

Colonel Enrique V. Manglano y Castellary (ESP-A)
Chief of the Spanish Public Affairs Office (CGTAD)

The Monastery of "Santo Domingo" has a long history linked to the city of Valencia and the creation of Kingdom of Valencia. In 1238, October the ninth, King Jaume I of Aragon took the city of Valencia from the Muslims and created a modern Kingdom integrated with the Crown of Aragon. During the conquest he was accompanied by his confessor, the Dominican Father Miquel Fabra, to whom he donated some lands by the river for the construction of a convent. He personally put the first stone for the construction of the royal Monastery of the Order in April 1239, four months after the Conquest of the city. So, the site of the CGTAD HQ is one of the most ancient historical buildings of Valencia.

For many centuries the Monastery was enriched by Kings and noble citizens who wanted to collaborate with the mendicant Order and to be buried in the most famous monastery of the city and kingdom of Valencia.



Chapter House or Capillary Classroom

In the XVI Century (between 1310 and 1320) the Capillary Classroom was built, a jewel of Mediterranean Gothic style at the expenses of the first Lord of Manises, Sir Pere Boïl.

Built by an unknown architect, it was the place where the former religious community met.

It is known as "The Hall of the palm trees" for its four thin towering columns in the shape of palm trees, supporting the ribbed vault. It is square, 12 meters wide, made of ashlar stone. On the walls there are up to fifteen coats of arms of three types: Crown of Aragon, Don Pere de Boïl (tower and steer) and of his wife Altadona de la Scala (stair steps). However, In the double tomb rest the remains of two of their descendants.

The whole room is surrounded by a stone bench, rebuilt between 1950 and 1953 by order of Commander General Gustavo Urrutia, consisting of two levels or steps where the monks sat in the chapter.

It was the scene of major events of the Kingdom of Valencia as chapters, General Courts, and even the act of foundation of "Generalitat Valenciana", 600 years ago.



Gothic Cloister

The Gothic cloister was initiated in the early fourteenth century; it is square (34 meters wide) and has six pointed arches on each side. It has one arch less in the north wing and stone filigrees with heraldries in the east. In the centre, there is a small garden with a Gothic style well curb.

The four naves of the splendid cloister had a large number of chapels on the western and southern walls and joint altars on the northern ones. There were, also, abundant gravestones. They belonged to illustrious families with a right to burial in exchange for donations.

A chapel on the side protects the plaster sculpture, attributed to Emilio Calandín, of Vicente Domenech "El Palleter"; (a vendor of matches) who declared war on Napoleon in Valencia on May 23rd of 1808.



Chapel of Kings

King Alfonso V of Aragon, the Magnanimous, ordered its construction in 1439 and his brother and successor, Juan II, finished it in 1463, with the auxiliary bishop Rodrigo de Borja, future Pope Alejandro V, celebrating the first Mass.

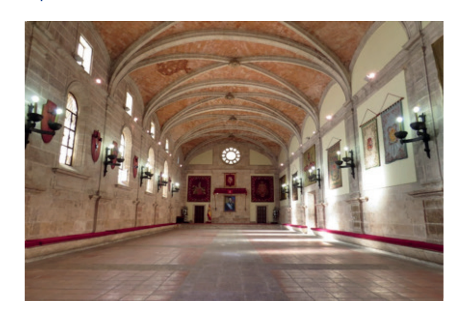
It seems that the chapel was built to be the burial place of the kings of Aragon Alfonso V the Magnanimous and his wife Maria of Castilla, but ultimately it was not. Later, it was ceded in 1535 by Emperor Carlos I of Spain to Mrs. Menda de Mendoza, Marchioness of Zenete, as the family vault.

It has a square ground floor made with ashlar stone and 1.5 meters wide walls, separated from the military parish by a blazoned gothic grille. The vault is the work of Francisco Valdomar. The altarpiece was put in 1588 dedicated to the Virgin of Hope. Near it, we find the Plateresque set of chairs and the "double snail" stair. In the center the sepulcher of the marquises of Zenete, carved in Genova, can be seen, with Paros' marble from around the XVI century. Laying at their feet the daughter of both: Mencia de Mendoza, who was married to the Duke of Calabria.



Throne Room. Monasterys ancient refectory

Placed on the south side of the cloister, it was built between 1560 and 1567 (16th century). It's 32 X 10 meters in size. Its vault is of neoclassic style. The hall is built in stone. The room is decorated with historical banners and presided over by a large portrait of HM the King of Spain.



This room is used for formal events such as medal ceremonies, military appointments and events of special relevance; there are also civilian or military events and several CGTAD Music concerts per year, with free entry.

Military Parish and Principal Facade

The current "Chapel of San Vincente", neo-classical style, was built on several Gothic cloister chapels.

Dedicated to St. Vincent Ferrer, it was designed by José Puchol late 18th century, who gave it the appearance of the Renaissance churches in Rome. It is decorated with marble from Valencia quarries.



The allegoric religious paintings were made by José Vergara and the sculptures by Puchol. The two lateral pictures by Vicente Salvador (1637-1680), representing "El Compromiso de Caspe" and "El regreso de las naves a Barcelona", the last one showing the master friars of the era.

The floor has been excavated and, on the side, a sepulcher with ceramics and a gravestone can be seen. The public can access it from Plaza Tetúan for religious ceremonies.

The Church Facade, in Renaissance style, is a "stone altarpiece" with the images of San Vicente Ferrer, Santo Domingo and San Luis Beltrán.



The tympanum is decorated with various blazons.

San Vicentes Cell

It is a simple altar and a medieval image of the Dominican saint's head. it's coated with tiles which proceeded from the Refectory. Two gravestones remind us of the plunder in the Napoleonic and Civil (1936-39) wars.

Clemente VIII granted the creation of a Brotherhood of 12 members in 1604 with the Valencian nobility disputing the honor of belonging to it.

The ancient and illustrious Royal Monastery of Santo Domingo in Valencia was the Regional Military Headquarters after the secularization of the Dominican Commonwealth, a fact which happened more than a hundred and seventy years ago. Nowadays, it houses the High Readiness Land Headquarters (CGTAD), although the building itself retains the name of Capitanía General de Valencia (Valencia Military Headquarters).

The Royal Convent of Santo Domingo was declared a National Monument on the third of June, 1931.

Use of the Monastery of Santo Domingo by NRDC-ESP.

The Royal Monastery of Santo Domingo has been, for the last years, the scenario for some important events of NATO, like Land Command Corps Commanders' Conference (LC3).

LC3 rotates among HQs of NATO in Europe and brings together the senior leaders from the Land NATO Force Structure (NFS) and Command Structure (NCS) and allows the gathering of the common state of the Allied Land Forces.



One LC3 was held in Santo Domingo in October 2017.

The shared objective for LC3 17 was to develop the land adaptation strategy using the theme "Command and Control (C2): "How we fight": SACEUR joined the LC3 11/17 to give its inputs on "NATO Command Structure, Adaptation and return to Strategic Concepts of Deterrence and Defense": NRDC-ESP closely supported LANDCOM in the organization and development of this paramount Land Commanders Conference and proposed the Monastery of Santo Domingo as the perfect framework for the conference.





A symbol of our HQ : A carob tree

Command Sergeant Major Angel J. Brosel Alegre (ESP-A)
CSM NRDC-ESP

Allow me not to follow what is expected of an article for a publication that reviews the activities carried out by our Headquarters during the year.

For years, I have wanted to write an article about a tree, a carob tree, that is within the flag and that caught my attention from my first day at the HQ. I also wonder, will readers understand? I hope so.

In the early days of September 2001, the first members of what was then called HRF (L) HQ arrived at the Betera Military Base. We had started working in the "Constitution Team" in the San Domingo Barracks of Valencia. What we found was not quite the same as what we enjoy today; buildings that had housed an infantry brigade in the process of dissolution, building work everywhere, old furniture, new personnel arriving daily. There was not even a fence separating us from the rest of the base, plus neglected gardens that cried out for water and attention. Part of the construction work was the one later to be named "Esplanade of the flags". The foundations were laid for the flagpoles, the garden was designed and trees were planted, but in the middle of it all was an old carob tree. The size of the tree trunk indicated it was an old tree, a century old. Although at first sight it was dry and was going to be pulled out, someone had the good sense not to cut it, as it was not dead at all; it had a thin branch that indicated that it was alive.

The carob tree is a tree that can have a large bearing, of great rusticity and resistant to drought. It is native to the Mediterranean region and does not withstand low temperatures. Its fruit, carob, is used mainly as fodder for livestock and, currently, its flour is used in dietary products. The "locus bean gum" is obtained from the carob seed, which is used as a thickener and stabilizer. You will find it on the labels of many products as an E410 additive. In the past, its firewood heated many homes in this region.

As a curiosity, in ancient times the seeds were used as the original carat pattern, weight unit in jewellery and gemmology, since their size and weight is uniform. The word carat comes from the Greek keration and hence derives Qarob in English, qaroube in French and karob / karuben in German. The Spanish translation algarrobo / algarroba comes from Arabic.

That fine green branch is what I consider to be a symbol of the HQ NRDC-ESP. It was born discreetly from a half-dead tree that nobody paid attention to. After seventeen years it has grown and consolidated and has become a tree of considerable size.

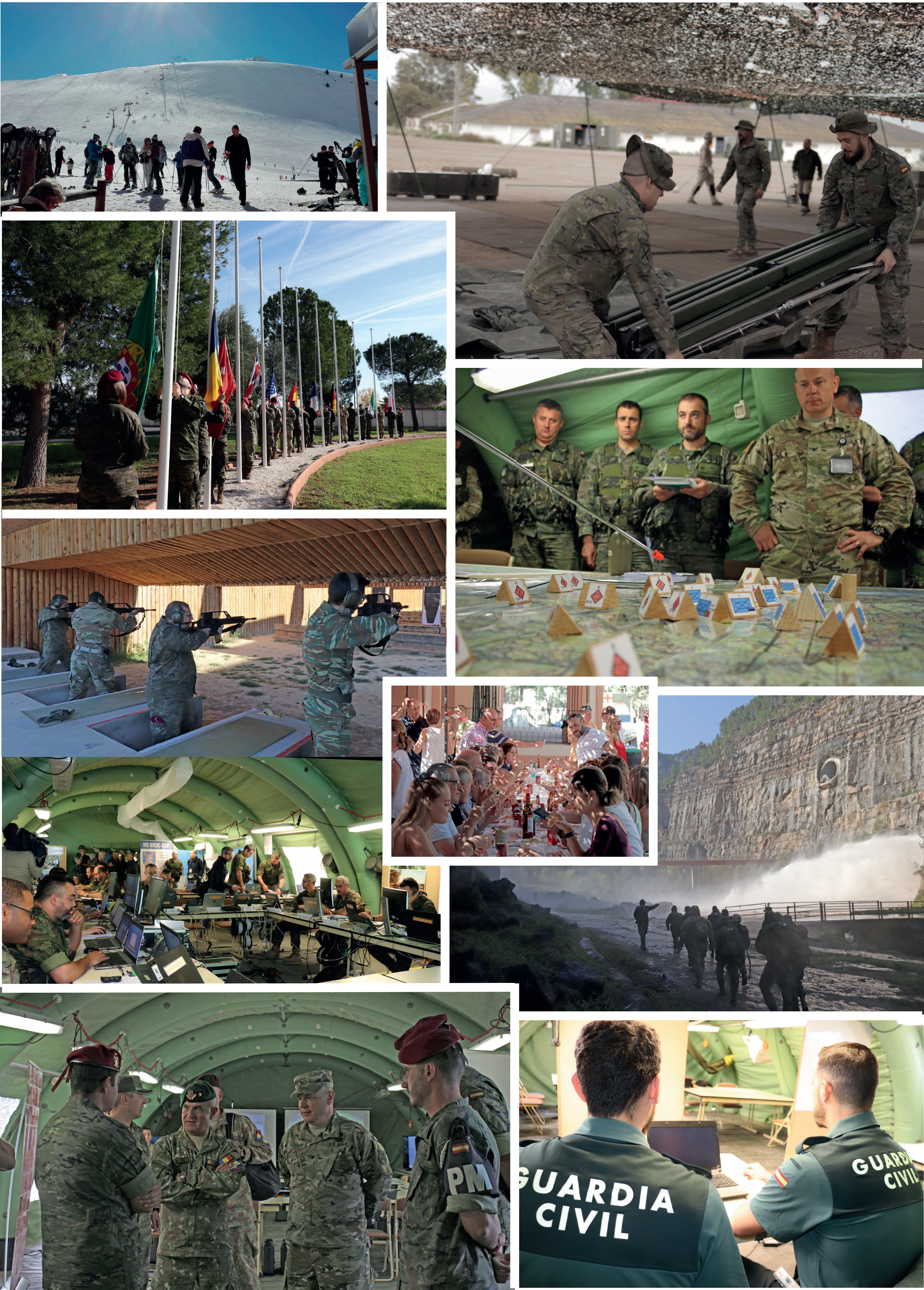
This is our Headquarters, it was born discreetly and after facing multiple certifications, exercises, deployments, all to fulfil the different missions assigned, it has been able to find its place within the NATO Forces Structure (NFS) and the Land Community. We, the men and women who are assigned to the HQ NRDC-ESP, together with those who preceded us, are the "gardeners" who have kept the carob tree alive.


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